PATTERNS OF INNOVATION: A HISTORICAL CASE STUDY OF MILITARY INNOVATION IN THE NETHERLANDS EAST INDIES NAVY FROM 1900-1942

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by

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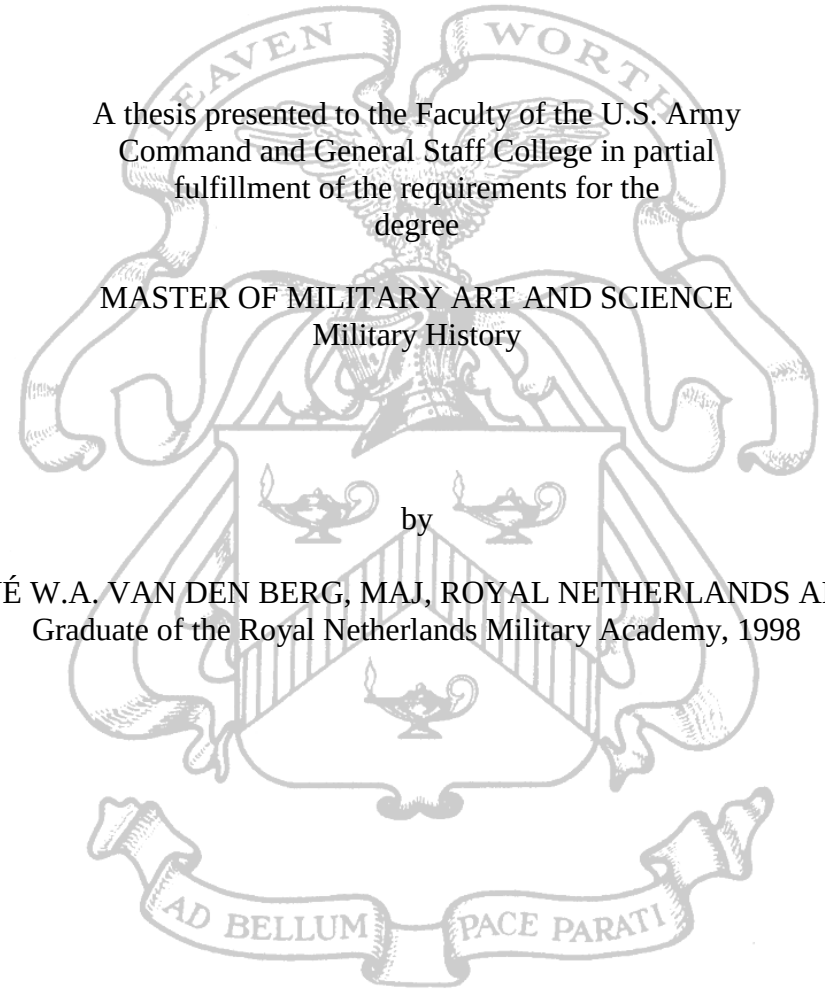

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

PATTERNS OF INNOVATION: A HISTORICAL CASE STUDY OF MILITARY INNOVATION IN THE NETHERLANDS EAST INDIES NAVY FROM 1900-1942, by Major R. W. A. van den Berg, 163 pages.

At the beginning of the twentieth century the Netherlands East Indies (NEI) represented one of the richest colonies in the world due to its natural resources. The purpose of this thesis is to examine innovation by the Netherlands East Indies Navy during the period of the years 1900–1942. The Netherlands East Indies Navy was defeated by the Imperial Japanese Navy in March 1942. Victory is a common–but inadequate–measure of innovative success. Exogenous factors play a central role. Therefore this thesis uses military effectiveness as a more useful measure of military innovation. This thesis will use a conceptual framework to analyze innovation within the NEI navy. It examines the importance of strategic calculations, the relation between technology and innovation, the organizational politics of innovation, and civil-military collaboration within the Netherlands east Indies Navy. Research revealed that the NEI Navy possessed an innovative culture but that inter-service rivalry, intra-service rivalry, financial constraints, and navalist discourses inhibited the Dutch from deriving maximum combat power from the resources available.

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ACRONYMS

ABDA	American-British-Dutch-Australian (Command)
IJN	Imperial Japanese Navy
KNIL	Koninklijk Nederlands-Indisch Leger (Royal Netherlands East Indies Army)
LCDR	Lieutenant Commander
LVAGDP	Luchtvaart Afdeling (Dutch Army Air Force)
MLD	Marine luchtvaartdienst (Dutch Naval Air Service)
NEI	Netherlands East Indies
RNLN	Royal Netherlands Navy

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CHAPTER 1

INTRODUCTION

Background

The purpose of this thesis is to examine innovation by the Netherlands East Indies (NEI) Navy during the period of the years 1900–1942. Most of the literature on the NEI Navy addresses the ambiguous strategy that changed several times during this period. Furthermore the literature focuses on the actual battles of the NEI during the Japanese attack on the Pacific Archipelago in 1942. Underappreciated in the literature is military innovation within the Netherlands Armed Forces in the period from 1900–1942, and more specifically military innovation within the NEI Navy.

Methodology

Williamson Murray describes innovation as: "The processes of change during peacetime in which military organizations incorporate the experiences of the past (distant as well as recent history), new technologies, new tactical and operational concepts, and the ever changing strategic framework into their vision of future war."[1] But how should military innovation be measured? In other words: how do we measure innovative success within the Netherlands East Indies Navy? Victory is a common–but inadequate–measure of innovative success.[2] Exogenous factors like adversarial size, political landscape and resources play a central role. Therefore this thesis will use military effectiveness as a

[1]Williamson Murray, "Historical Perspectives on Navy Innovation" (Maritime Innovation Symposium, Naval Station Norfolk, NWDC, 13 March 2012).

[2]Jeffrey A. Isaacson, Christopher Layne, and John Arquilla, *Predicting Military Innovation* (Washington, DC: RAND Corporation, 1999), 9.

more useful measure of military innovation. Military effectiveness is defined as: "a fully effective military is one that derives maximum combat power from the resources physically and politically available.[3] In other words, how did (military) authorities integrate new and advanced weapon systems with appropriate tactics, and consequently an effective operational concept to reach the full potential of the new way of fighting?

This research is not intended as a "report card," grading how effectively the Netherlands East Indies Navy innovated in the period covered by this thesis. It is intended to analyze how and why innovation occurred. One should realize that military innovation in peacetime is nonlinear, contingent and infected with serendipity.[4] This thesis, a historical case study on innovation, offers a reconstruction that intends to provide insights in the nature of processes involved in major innovation and change in military organizations. It intends to highlight patterns that encouraged or inhibited innovation. This thesis will use a conceptual framework to analyze the instances of how the Netherlands Indies Navy, as part of the Royal Netherlands Navy, developed new technology and weapons and how this was incorporated into new doctrine. This framework is based on the patterns of innovation as suggested by Allan R. Millett in the fundamentally and epistemologically innovation study *Military Innovation in the Interwar Period.*[5] These patterns are defined as:

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[3]Ibid., 9

[4]Barry Watts et al., "Military Innovation in Peacetime," in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R. Millett (New York: Cambridge University Press, 1998), 381.

[5]Allan R. Millet, "Patterns of Military Innovation," in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R. Millett (New York: Cambridge University Press, 1998), 335-336.

1. The importance of strategic calculations;

2. The influence of technology on innovation;

3. The organizational politics of innovation;

4. The level of civil-military collaboration;

These patterns will be used as criteria to analyze military innovation of the NEI Naval Forces. In this thesis, this construct will be projected on different time periods, starting in 1900, and leading up to the Second World War. The NEI armed forces were constituted of naval and army forces. The naval forces will form the primary focus of this research, but it will prove useful to conduct research about the interaction between both services to analyze how and why inter-service rivalry impeded innovation.

As discussed, innovation in peacetime is nonlinear. This thesis intends to avoid theoretical generalizations. The future is unknown and unknowable. Military pundits advocate that militaries are now in the early stages of a period, in which information-processing systems, precision weaponry, and emerging fields like cyber warfare, and low observable technologies will prompt a new way of warfare that is not yet understood. This is roughly analogous to the period covered by this thesis. Another parallel between the period covered by this thesis and the contemporary operational environment is that both can be characterized as a period of budget constraints and eroding popular support, suggesting that the contemporary environment is as daunting as during the interwar period. Therefore this thesis intends to provide insights into the characteristics of the innovation process, contributing to the awakening of consciousness of how to think about innovation.

Literature Review

There are numerous books, journal articles and official archival records on the NEI naval forces. Invaluable to this project were the authoritative naval journals *Marineblad* from 1889 till 1939, made available through the Dutch National Library in Amsterdam. These journals provided an independent forum for Dutch naval officers to discuss professional topics and inform the naval circles about doctrinal and technological developments. These primary sources provided excellent insights in the lines of thought in the contemporary navy. It painted the picture of how technology was merged with doctrine and provided fascinating insights in the rivalry and dispute both in the navy and between the navy and the army. Helpful primary sources were the military journals *Militaire Spectator* and *Indisch Militair Tijdschrift*. These provide an overview of different views on doctrine and tactics in the identified time periods and it supported to identify "product champions" that acted as a catalyst to military innovation within the NEI navy. A good secondary source was the comprehensive dissertation *Navalism nekt onderzeeboot* by J. Anten. He did thorough research on how the NEI navy changed from a battleship centric navy, to a submarine centric navy, and then back to plans to make the navy battleship centric again. This ambiguous strategy inhibited innovation in the NEI navy. Two other sources that provided a good overview of the development of NEI naval strategy were *De Strijd om de Slagkruisers* by the authoritative Prof. Dr. G. Teitler, a very thorough account on the political debate in the Netherlands on the acquisition of battle cruisers in the period 1938-1940 and *Recht zo die Gaat* by P. Jungschlager on the naval strategies for the defense of the East Indies.

Structure of the Thesis

Chapter 2 of this study provides the necessary context for this research. It examines Dutch foreign policy in the period from 1900 to 1943. Furthermore this chapter examines dominant naval theories in specific time frames. It also describes the organization of the Dutch naval forces, divided in naval forces that operated in Europe and forces that operated specifically in the Pacific Archipelago.

Chapter 3 addresses military innovation in the years 1900–1922. Initially the Dutch government saw no external threat against the NEI. The armed forces in the NEI were used for domestic policies. The Netherlands stayed neutral during the First World War. The belligerents of the First World War all drew lessons from this war. But this materialized in different views of how future wars would be fought. This chapter examines how the Netherlands navy, lacking actual fighting experience from the First World War, perceived lessons from the First World War and how these lessons inhibited or fostered innovation. In this period, Japan was emerging as the major threat to the oil-rich Dutch colonies in the Pacific. This changed the view on defense policy for the NEI. Naval boards were preparing significant rearmament and innovation programs. This would change after the 1922 Washington Naval Treaty.

Chapter 4 looks at the years 1922–1930. The Washington Naval Treaty, signed on 6 February 1922 by representatives of the United States, the British Empire, France, Italy, and Japan, established tonnage ratio for capital ships. This caused a halt to the current naval arms race. Furthermore the participants legitimized the possessions of each of the signatories. Each had separately guaranteed the integrity of the Dutch possessions in the NEI, which gave the Dutch some measure of security. As a result, the Dutch government

discontinued the rearmament program. This would change in the 1930s when Japan, looking for expansion of its territory for resources and space for its growing population, was clearly having designs on the NEI.

Chapter 5 describes the period leading to World War Two. In this period the war in Europe was inevitable and the NEI was clearly facing a clear and present danger by Japan. In this period the Dutch government was trying to reach out to other countries to build coalitions but was restricted by its neutral foreign policy. It also started a rearmament program but national resources and facilities were too limited to build a credible force. It had no access to technology, a prerequisite for military innovation. The Dutch government also started to approach countries for the supply of weapons and equipment but was again limited by its neutral policy and potential suppliers, like the United States and Great Britain, were limited due to their own armament programs or isolationist posture.

Subsequently, chapter 5 also describes the start of World War Two. Following the German invasion in the Low Countries and France in 1940, the NEI remained its neutral position. As a government in exile, the Dutch Government tried to build alliances with Great Britain and the United States for a collaborative defense of the NEI. Directly after the Japanese attack on Pearl Harbor, the Dutch Government declared war on Japan, causing a remarkable strategic shift: it went from a neutral position that had lasted for more than hundred years, to an offensive posture. This chapter examines how the NEI Navy conducted a form of military change that is different from military innovation: military improvisation. After the declaration of war the NEI was explicitly looking for support from the United States and Great Britain. The forming of a coalition, later

materializing in the American, British, Dutch, and Australian (ABDA) Command, led to the adaptation by NEI naval forces of American and British operational procedures. This command, led by a British admiral was designed for the defense of the Pacific Archipelago but did not last long. It was abandoned in March 1942. The NEI Naval Forces, now operating with American and British Forces under its command, were ultimately defeated during the Battle of the Java Sea by the Japanese naval forces in March 1942.

CHAPTER 2

STRATEGIC CONTEXT

Naval Theory

Dutch naval strategy from 1900 until 1942 was largely influenced by theories from contemporary naval theorists. In order to gain a better understanding of the dominant naval theories, three major tendencies will be described. These tendencies are: the Mahanian school, the *Jeune Ecole* and the ideas of Sir Julian Corbett.

Alfred Thayer Mahan (1840-1914), at the age of fifty, emerged from the relative obscurity of a traditional naval career to achieve international renown as a historian, strategist, imperialist (after 1895), and navalist.[6] His name was venerated in naval circles the world over. He earned this reputation for his influential books and articles on naval theory. His three most influential books are: *The Influence of Sea Power upon History*: 1660-1783, published in 1891, *The Influence of Sea Power upon the French Revolution and Empire*: published in 1890, and *Naval Strategy Compared and Contrasted with the Principles and Practice of Military Operations on Land*: published in 1911.

Mahan's theory is based on the concept of Sea Power. Unfortunately, he neglected to define it to any degree of precision. As the term appears throughout his works, two principles emerge: command of the sea through naval superiority, and that combination of maritime commerce, overseas possessions, and private greatness.[7] Mahan

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[6]Philip A. Crowl, "Alfred Thayer Mahan: The Naval Historian," in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, NJ: Princeton University Press, 1986), 444.

[7]Ibid., 451.

did extensive research into the relationship of naval history and modern western history. His main conclusion was that naval supremacy had not only given England security but also a commanding global position, commercial wealth, and preponderance in Europe. The narrative of Great Britain's rise to great power status "reflected" the true role of Sea Power and its influence on history.[8]

For Mahan, naval strategy in war was concerned with the functions of navies, their objectives and deployments, logistics, communications and in particular the form and priority of commerce raiding.[9] It can be summarized as the principle that a state can gain command of the sea by destroying its enemy's main battle fleet. This can also be achieved by having the enemy "shrink from direct confrontation, by bottling up his navy in its harbors" but, according to Mahan's ideas, other forms of naval operations, like attacking the enemy's commerce, never succeeded in the past and can never succeed in the future.[10] He asserted that "as a primary and fundamental measure, sufficient in itself (commerce destruction) is probably a delusion and a most dangerous delusion."[11] He did not underestimate the influence of commerce destruction but saw it from a more strategic perspective in such a way that the stoppage of commerce compels peace. Through

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[8]Ibid.

[9]Jon Tetsuro Sumida, *Inventing Grand Strategy and Teaching Command: the Classic Works of Alfred Thayer Mahan Reconsidered* (Baltimore, MD: The John Hopkins University Press, 1999), 43.

[10]Ibid., 46-47.

[11]Crowl, 459.

economic strangulation wars are won. He asserted that: “overbearing power on the sea which drives the enemy’s flag from it, or allows it to appear only as a fugitive.”[12]

Mahan was significantly influenced by the works of Baron Antoine de Jomini through the influence of his father Dennis Hart Mahan, the Dean of Academics at West Point. Jomini also contended that the enemy’s main forces are the ulterior objective. Strategic concentration of force and tactical boldness are the leading principles of Mahan’s theory of naval operations. This strategic concentration was aimed at reaching the conditions for a decisive battle. But a central position achieved through concentration is contributory, not principal. It is more important to be stronger than the enemy, once concentrated. This should lead to the objective of concentration: a decisive defeat of the enemy’s capital fleet. Mahan states: “control of the sea, by reducing the enemy’s navy, is the determining consideration in a naval war.”[13] In naval war, according to Mahan, coast defense is the defensive factor, the navy the offensive. Hence, both strategically and tactically, navies should be employed offensively.[14]

Mahan did not give attention to joint operations, or more specific: amphibious operations. The division of naval forces was anathema to Mahan. He was cautionary to this form of naval operations. The peculiar character of such operations was: “the helplessness while afloat of the army contingent embarked.” Power projection from the sea and more specific amphibious operations that would be of growing significance in the twentieth century, was mostly disregarded by Mahan. Only after the success of his first

[12]Ibid., 455.

[13]Ibid., 458.

[14]Ibid., 459.

two *Influence* books did Mahan become one of the major and most influential figures in American navalism. Navalism is defined as "a policy of naval rearmament that was designed to serve as a means of national aggrandizement and that interpreted national defense requirements within the context of an alleged need to expand."[15] In other words: it is an ideology (political) that claims maritime expansion is vital to a nation's existence. Some features of this navalism as a component of a national defense policy include: national prestige, trade, colonies and a powerful commanding foreign policy. Furthermore, the means to these ends are a powerful fleet. Another characteristic of navalism is that naval tasks, other than control of the sea, are trivialized. An example is marginalizing the importance of coastal defense.

Naïve commentators tended to associate almost every expression of new navalism with Mahan's influence; the facts show that most contemporary navalists had become ardent navalists long before they had heard of Mahan. But Mahan's philosophy of Sea Power was enthusiastically received by all navalists because it defined, focused and gave clear direction to, the ideas and notions already held by many, like the German Kaiser, Secretary of the Navy Teddy Roosevelt, and Yamamoto Gombei of Japan.[16] It provided them with a good demonstration of their case and the cases of navalists abroad. Mahan's philosophy of sea power was well received in other countries. His works were translated

[15]Rolf Hobson, *Imperialism at Sea: Naval Strategic Thought, the Ideology of Sea Power, and the Tirpitz Plan, 1875-1914* (Boston, MA: Brill Academic Publishers, 2002), 296.

[16]Lisle A. Rose, *Power at Sea: The Age of Navalism: 1890-1918* (Columbia, MO: University of Missouri Press, 2007), 17-20, 97-106.

into German, French, Japanese, Italian, Spanish and Swedish. All these navies were concentrating on building battleships and preparing for battle.

As mentioned before, there are outstanding similarities between military and naval history and strategic theories. Mahan linked the concepts of Jomini to the fundamental principle of his naval theory: command of the sea. Regarding the analogy of Jomini, Mahan sought the decisive battle against the enemy's main force. But Mahan's fundamental principle of concentration does not necessarily lead to decisive battle. For a weaker navy, the consequences of defeat in a decisive battle were catastrophic and unredeemable. The French admiral Aube had pointed out in 1882 that new techniques would even make it more unlikely that the weaker fleet would seek a decisive battle. It would rather retire in its protected harbors as a *fleet-in-being*.[17]

The *fleet-in-being* concept is not a Mahanian paradigm. It was first used by the English Royal Navy Commander, Lord Torrington.[18] In 1690, after the battle of the Beachy Head with the French, the Royal Navy, reinforced with Dutch Navy ships, faced a superior French fleet. Lord Torrington ordered his fleet back to defensive positions along the coast. He assumed the French would never risk an invasion with his strong fleet "in being"[19]. A fleet in being is defined in modern parlance as "a fleet that avoids decisive action, but, because of its strength and location, causes or necessitates counter

[17]Ibid., 174.

[18]J. J. Widén, *Theorist of Maritime Strategy: Sir Julian Corbett and His Contribution to Military and Naval Thought* (Burlington, VT: Ashgate Publishing, 2012), 131.

[19]Ibid., 131.

concentrations and so reduces the number of opposing units available for elsewhere."[20] While avoiding decisive battle and adopting a defensive posture (for example in its defended harbors), a numerically inferior navy can conduct offensive strikes against a concentrated enemy. Hereby it can interdict the enemy's lines of communication and can influence and ultimately even achieve control of the sea locally. For this type of battle an inferior navy, using asymmetric techniques and technology as torpedoes, submarines and small torpedo boats , can achieve significant effects against a numerically and technological superior, battleship centric navy.

The fleet-in-being concept is typical for employment of a small, numerically inferior navy. To provide further context it will prove useful to discuss a second theory for the employment of a small navy: the risk strategy. Risk strategy is more a political than a military strategy. This strategy was developed by the German Admiral von Tirpitz in the late 1890s, and further developed in the years leading up to World War I. In 1896, Tirpitz stated, " Even the greatest sea state of Europe would be more conciliatory towards us if we were able to throw two or three highly trained squadrons onto the political scale and correspondingly into the balance of conflict."[21] A risk strategy aims at changing the international power balance by deterrence. A country tries to prevent an invasion or attack by maintaining a strong (although numerically inferior), credible navy. The stronger navy is able to defeat the weaker navy but at such a cost that it is not able to

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[20]U.S. Department of Defense, JP 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: Government Printing Office, 2010), 205.

[21]C. J. Smith, LCDR USN, "Small Fleet-Big Risk" (Diss., Naval War College, Newport, RI, 1995), 9.

engage other strong navies anymore. The basic underpinning of this theory was deterrence. A numerically inferior navy could enhance this deterrence by significantly increasing its own capabilities and therefore becoming a credible threat to the superior navy and by building coalitions. The latter was the political element of this strategy. Key to success was that the superior navy perceived this numerical inferior navy of a coalition as a threat. German propaganda was designed to reinforce the deterring effect of risk fleets.

As stated earlier, Mahan integrated Jominian principles into his naval theoretic soil. It is hardly surprising that Mahan's theories experienced the very same problems that Jomini's had met in confronting changing historical conditions and technological transformation. Indeed, they failed at the very same points.[22] First, improving technology on land transformed warfare. Jominian principles would prove immutable to modern warfare. At sea, steam ironclads, steel guns and armor, the torpedo, the mine, and finally the internal combustion engine that enabled submarine warfare, revolutionized naval warfare in much the same way as land warfare. Initially, Mahan held to his paradigms by defending that tactics might have changed, but that his principles were universal. But, over time, Mahan preferred to discuss foreign policy to technical matters and subsequently had less focus on technological developments and their influence on naval warfare. Initially, he opposed the introduction of the Dreadnoughts, the newest generation of battleship. Presumably, the ageing authority became out of touch. He debated the issue of Dreadnought's in the pages of *the Naval Institute Proceedings* with a young

[22]Azar Gat, *A History of Military Thought: from the Enlightenment to the Cold War* (Oxford, NY: Oxford University Press, 2002), 467.

Lieutenant Commander, William S. Sims. Even President Roosevelt, himself a navalist and strong believer of Mahan's theories, sided with the latter. Mahan was outdone by his opponent's superior technological knowledge and had to admit: "I am too old and too busy to keep up."[23] Another example of Mahan's waning technological and tactical authority is the fact that, when requested by the US Naval War College to comment its new plan to defeat Japan (War Plan Orange) in 1911, his advice was rejected as unrealistic. However, the really serious challenges to the precepts and principles of classical naval warfare came from elsewhere.

The torpedo was the most extraordinary and potent new naval weapon in the 1880's. In France, the *Jeune Ecole* made it the center-piece of its program. The Jeune Ecole announced a change in French naval thought. One of its founders, Captain Richard Grivel, already expressed his ideas in 1860 that great encounters between battle fleets represented a severe danger to the inferior power. The British navy proved superior during previous battle and France and Britain were colonial rivals. Future battles were inevitable. An ambition to fight fleet battles against the Royal Navy should be dismissed.[24] Battle fleets were also extremely expensive and Grivel warned that engaging in great naval battles against a superior opponent would be to stake all on a single throw. Furthermore, France had to maintain a massive army to fight enemy's along its continental borders. Priorities of budgets were given to this massive army. The *Jeune Ecole* urged redefinition of French naval strategy. The *Jeune Ecole* envisioned a future

[23]Ibid., 472.

[24]Arne Roksund, *The Jeune École: the Strategy of the Weak* (Boston, MA: Brill Academic Publishers, 2007), 3.

dispute for the commercial hegemony of the seas, not dissimilar to Mahan's concept. The increased importance of world trade and Britain's pivotal role made Britain more dependent on its imported goods. The most effective way to make Britain collapse was by aggressive and merciless raids against its seaborne trade.[25] According to this approach, destroying the enemy's trade should become the key objective of the French navy. One of the major obstacles the *Jeune Ecole* circumvented was the British Navy's ability to marginalize the French influence by blockades. Steam power changed this barrier against the new French offensive naval warfare. Steam power constrained British blockades and opened the way for the French. Steam made effective blockades difficult to uphold. The British frequent need for coal would inhibit permanent blockades. The steam engine would give small French raiding elements the means to escape attention of blockade forces and under the cover of night torpedo-boats would imperil any ship which remained within range. The British were soon to find out that effective blockades became virtually impossible. In 1888, the British navy discovered during extensive maneuvers that the French were able to slip out of the harbors at night and attack the British from different approaches.[26] The French *Jeune Ecole* led to doctrinal uncertainty in several countries. The basic concept of asymmetric warfare against a superior opponent was well conceived, especially in countries with similar small navies but technology would prove the misjudgments of the new French paradigms.

The asymmetric warfare of the *Jeune Ecole* was based on the torpedo and small, highly mobile crafts like torpedo-boats and eventually cruisers. But these smaller vessels

[25]Ibid., 8.

[26]Gat, 467.

did not prove seaworthy enough to project power and effectively minimalize the British fleets in the open seas. Furthermore, a British reaction inhibited full exploitation of the French naval warfare methods. In 1889 a Naval Defense Act changed the dynamics back to those that favored British hegemony on the seas. The act freed up budgets for an even stronger British navy (which in effect marginalized risk strategies effectuated by enemy coalitions), but more important it subsidized the introduction of the destroyer, designed to protect the fleet from marauding French torpedo-boats. The ebbing influence of the *Jeune Ecole* sparked a short revival of Mahanian theories, though short lived. The introduction of the internal combustion engine and the evolution of submarine warfare would change naval warfare profoundly. But at this time, other influential naval theorists had entered the intellectual arena. One of these theorists was Sir Julian Corbett.

Sir Julian Stafford Corbett wrote contemporaneously with Mahan. He became a leading maritime strategist and is best remembered for his book *Some Principles of Maritime Strategy*, which was published in 1911. He developed a maritime strategy that complemented Mahan's ideas. Departing from the tradition amongst naval strategists, Corbett was a civilian. He lectured for the Royal Navy at the British Naval College at Greenwich. He became the unofficial advisor of the British Admiralty during the dreadnought era. Corbett theorized that British maritime strategy was based on commerce. Furthermore, Corbett theorized that strategy needed a wider vision than the current conception of naval strategy. Maritime strategy looked beyond the enemy's fleets of the great routes of commerce, or command of the sea.[27] He stated: "of late years the world had become so deeply impressed with the efficacy of sea power that we are

[27]Gat, 484.

inclined to forget how impotent it is of itself to decide a war against great continental states, how tedious is the pressure of naval action unless it be nicely coordinated with military and diplomatic pressure."[28] Besides naval war being subject to strategy, he asserted that maintaining command of the sea was certainly the main aim of the war at sea but the decisive battle was not the only way to that end. Opportunity to fight a decisive battle does not always exist, nor will it always be necessary. A superior navy will deter the weaker opponent from seeking battle and the weaker will avoid decisive engagements. This is in sharp contrast to land warfare on the continent where conflicts between adjacent states tended to be aimed at decisive battles.

Corbett linked naval warfare to land warfare.[29] Corbett was one of the first to stress the integration of land and sea forces, hence the title Some Principles of Maritime Strategy. However, he also identified a distinction between maritime strategy and naval strategy. He saw naval strategy as a necessary component of maritime strategy. Naval strategy is the shaping effort for decisive engagements in the maritime or land domain. He theorized that it is almost impossible that a war can be decided by naval action alone. He asserted that the sea is a substantial factor of the principles that govern a war but wars are decided on land. Furthermore he stated that " issues between nations at war have always been decided- except in the rarest cases-either by what your army can do against your enemy's territory and national life, or else by the fear of what the fleet makes it

[28]Ibid., 484

[29]Ibid., 467.

possible for your army to do."[30] He saw command of the sea as a means to decisively influence land battles. This is where Corbett fundamentally differs from the generally accepted and by most navy's implemented precepts of Mahan. Corbett did not dispute Mahan's command of the sea theory. He stated that "the object of naval warfare must always be directly or indirectly either to secure command of the sea or to prevent the enemy from securing it."[31] Yet, he opined that command of the sea was a means to an end and not an end in itself. He differed from Mahan in how command of the sea could be achieved. Mahan contended that command of the sea is best reached through decisive battles, by destroying the enemy's battle fleet. Corbett wrote that command of the sea is exercised by determining the object of the war and then proceeding. Examples include: conducting defense against an enemy's invasion, attack on and defense of maritime commerce, and by supporting one's military expeditions on land.[32] Corbett asserted that command of the sea is about defending one's own lines of communication while denying the enemy protecting his lines of communication. Although Corbett identified offensive tasks for the navy--like blockades, supporting invasions, and raiding the enemy's commerce--he also identified defensive tasks. Corbett argued that command of the sea does not always exist. Given the nature of the seas it is physically impossible to exercise

[30]J. S. Corbett, *Some Principles of Maritime Strategy* (London: Longmans, 1911). New edition edited by E. Grove (Annapolis, MD: US Naval Institute Press, 1988), 15-16.

[31]Corbett, 91.

[32]Ibid., 165-166.

command of the sea in its purest form. The most common situation in naval war is that neither side has the command. Command is normally in dispute.[33]

Another area where Corbett disagrees with Mahan is the principle of concentration. Corbett does not believe that the concentration of naval forces is the highest and simplest law of strategy.[34] First, Corbett argued that an enemy can execute evasive maneuvers to avoid decisive battle. Second, concentration means a significant strength at one location but influences cohesion at other locations. By concentration a navy potentially loses its ability to effectively defend its own lines of communication. Corbett notes "concentration implies a continual conflict between cohesion and reach,"[35] and "the more you concentrate your forces and efforts to secure the desired decision, the more you will expose your trade to sporadic attacks."[36]

Corbett profited enormously from Clausewitz's distinction between absolute and limited war.[37] According to him conditions at sea made limited war very much the rule. On land, any disputes tended to engulf all of the belligerents forces and resources. At sea it is possible to isolate theaters or to hide a navy in a port or take other evasive measures to avoid defeat. Furthermore, Corbett stated that in a war between adjacent states "there will be no strategic obstacle to his being able to use his whole force."[38] This method is

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[33]Ibid., 91.

[34]Ibid., 160.

[35]Ibid., 136.

[36]Ibid., 160.

[37]Gat, 482.

[38]Corbett, 54-55.

preferred by weak navies or navies with limited resources to protect a vast empire.[39] According to Corbett limited war is "only permanently possible in the maritime domain, between island powers or between powers which are separated by sea but only under the conditions where the power that wants to conduct a limited war is able to command the sea to such a degree that it not only isolates the objective but is also able to defend its own territory against an invasion.[40] Corbett developed a new form of limited war in the unique maritime environment. Clausewitz's theory on limited wars describes a defensive limited war necessitated by a state's limited ambitions or weakness. Corbett claims that a limited strength coupled with a suitable strategy and a particular set of circumstances can be used to expand the power of the state. The success hinges upon the way the navy and the military are combining their efforts. Corbett contended that this concept is enjoyed by the defense, which sometimes enables an inferior force to gain its end against a superior one.[41]

Dutch Foreign Policy

This thesis investigates military innovation in the NEI navy from 1900 to 1942. Dutch foreign policy during this period was neutral and aloof. From the beginning of the 19th century, free trade and aloofness on the one hand and determination to defend the Dutch colonial empire on the other hand were the major components of this foreign policy. Involvement in international power struggles could complicate Dutch trade and

[39]Ibid., 54-55.

[40]Ibid., 57.

[41]Michael I. Handel, *Masters of War: Classical Strategic Thought*, 3rd ed. (New York: Routledge, 2000), 293.

colonial designs. In his book, Law *of War and Neutrality*, General J. C. C. Den Beer Poortugael, Governor of the Royal Netherlands Military Academy and later a member of the Dutch *Raad van State*, an advisory body of the Dutch government and the parliament, defined neutrality as: "neutrals are those states that under no conditions participate in a war between other states and that do not accept war related activities at its sovereign territory."[42]

After the Napoleonic Wars, the Netherlands was no longer one of the influential nations of Europe. It effectively became a third-rate power when Belgium seceded in 1839.[43] The Netherlands geographic location was of strategic importance. Its territory controls the mouths of three important rivers, namely the Rhine, the Maas (Meuse) and the Schelde (Scheldt).[44] The Scheldt connects the Belgium port of Antwerp with open sea and the Rhine is of strategic importance for the import German goods. Given its strategic location and German and French interests in the Netherlands, the Dutch nation was in a delicate political and military position. Each of the powers had sufficient reason to keep the others from exerting too much influence there. The country's geographical conditions and its inferior armed forces made the Netherlands indefensible against an invasion from a major European power. The country is predominantly flat and it lacks the strategic depth to build a coherent defense system. This strategically important position placed the Netherlands in a difficult position regarding its foreign policy.

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[42]Jacobus.C. C. Den Beer Poortugael, *Oorlogs-en Neutraliteitsrecht* Vijfde Boek ('s-Gravenhage: De Gebroeders van Cleef, 1900), 237.

[43]Maartje M. Abbenhuis, *The Art of Staying Neutral: the Netherlands in the First World War, 1914-1918* (Amsterdam: Amsterdam University Press, 2006), 30.

[44]Ibid., 26.

Dutch foreign policy was stable prior to the First World War. Once the war began, the Netherlands proclaimed its neutrality on 4 August 1914. With this proclamation, the Netherlands guaranteed its strict neutrality towards the belligerents. Although the lofty international agreements, designed to prevent, mitigate or regulate neutrality, looked good on paper, they proved ultimately subject to the designs of the belligerents.[45] The Netherlands were in a precarious position. The Dutch bordered by Germany and occupied Belgium on one side and the North Sea dominated by British warships on the other, had to convince both belligerent blocs they would and could stay neutral.[46] The Netherlands had no alternative than to preserve strict neutrality. The Dutch port of Rotterdam and the Rhine guaranteed the Germans access to international markets. Germany would not allow any British rapprochement with the Dutch and would invade the Netherlands to secure its vital economic interests. The Netherlands armed forces were too weak to forestall a German invasion before the arrival of a British expeditionary force. The British, in turn, would not hesitate to occupy Dutch colonial possessions in the Far East if the Dutch and the Germans became allies. The British presented the Dutch government with an impossible dilemma: either cut all ties with the Germans, or all overseas imports would cease.[47]

[45]Johan Den Hertog and Samuel Kruizinga, eds., *Caught in the Middle: Neutrals, Neutrality, and the First World War* (Amsterdam: Amsterdam University Press, 2011), 6.

[46]Ibid., 7.

[47]Abbenhuis, 34.

This ultimatum placed the Netherlands "between the devil and the deep blue sea."[48] Although Germany initially had designs on the Netherlands in the "von Schlieffen plan" to use it as maneuver space for its strategic encirclement of the French and British forces in France, it respected Dutch neutrality throughout the entire war. A possible invasion and ultimately an occupation of the Netherlands by the British would prevent the Germans from concentrating its forces against France. Furthermore a neutral Dutch state could act as a "windpipe" (*luftrohr*) for the German economy. Germany could import vital goods for its war economy, despite an effective British naval blockade. This circumstance, coupled with successful diplomacy and trade negotiations with the warring parties, especially Great Britain, Germany and, after 1917, the United States helped the Dutch maintain its neutrality during World War I.[49] Since no one violated Dutch neutrality, it created the perception with the Dutch Government and, the Dutch population, that the policy of armed neutrality was successful. Unfortunately, it neglected to consider that belligerent military-strategic and political considerations guaranteed Dutch sovereignty.

At the conclusion of World War I the Versailles Peace Conference convened in 1919. At the instigation of President Woodrow Wilson, the Versailles Treaty created the League of Nations, which was established as the basis of a new world order. The League of Nations guaranteed the collective security of its member states in order to maintain international and European stability. Neutral countries were not invited to the Peace Conference. After robust diplomatic intervention in Paris, the Netherlands ensured

[48]Ibid., 7.

[49]Ibid., 25.

informal participation of neutral countries like herself.[50] Participation of the Netherlands was subject to national debate. Membership in the League of Nations would violate neutrality. Article X of the League of Nations Covenant raised some concern. It stated "each member guarantees the territory and existing independence of all other members against external aggression."[51] This article could potentially violate Dutch foreign policy. Membership could offer advantages, however.

Participation of the Netherlands was also a point of issue to the international debate. In the decades leading up to World War I, the Netherlands developed a strong self-image and foreign reputation as a champion of international law. It helped codify the rights and obligations of neutral states.[52] The Triple Entente uttered the sharpest criticism against the Dutch government. They accused the Netherlands of granting German troops permission to cross Dutch territory upon their withdrawal from Belgium, and the Netherlands allowed Kaiser Wilhelm to reside in the country following his abdication. They also complained of the Dutch benefitting from the war by its trade with Germany.

Dutch membership in the League of Nations would prevent it from becoming an international pariah. Furthermore, the Dutch government saw the League of Nations as a stage for the reconstruction of Europe. In 1919, the Dutch government signed the League of Nations Covenant in Paris. Membership of the Netherlands contributed to a better

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[50]M. Stadhouders, "Nederland en de Volkenbond 1919-1922, De Vilniuskwestie en de rol van Minister van Buitenlandse Zaken H.A. van Karnebeek" (Diss., Universiteit van Amsterdam, [2010]), 37.

[51]W. C. Holborn, ed., *The League of Nations Unions*: *The Covenant Explained* for *Speakers and Study Circles* (London: Educ. Pub Co., 1919), 13.

[52]Herman Amersfoort Wim Klinkert, ed. *Small Powers in the Age of Total War, 1900-1940* (Leiden: Brill Academic Pulishers, 2011), 10.

international position and the League of Nations improved peace and disarmament in Europe after World War I. The Dutch government recognized the violation of Belgian neutrality and the animosity of former belligerents towards the Dutch foreign policy but neutrality, nonetheless, survived the conflict. The Netherlands adopted neutrality again during the 1920s. The League Covenant allowed the Government to combine membership with neutrality. The general perception in the Netherlands was that the League of Nations could act as a stage to redevelop the neutrality concept in an internationalist fashion, in which preventing war became the neutrals highest goal.[53] With the membership of the League of Nations, Dutch foreign policy changed from a passive to an active neutral policy, known as the independence policy.

The demilitarization of Germany and the establishment of the League of Nations created a false sense of security in the Netherlands. Future conflicts appeared unlikely. This caused mass reductions within the Netherlands armed forces. After 1924, a strong anti-militaristic and pacifistic discourse emerged.[54] Several peace movements evolved within the European neutral countries and in the Netherlands, a movement for the League of Nations and Peace was established. This pacifistic movement aimed at weapon reduction and cooperation between neutral states.[55] Furthermore, atrocities committed during World War I, aerial bombardments and the use of gas munitions generated an anti-war discourse. This anti-war discourse gained popular support in the Netherlands.

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[53]Hertog and Kruizinga, 11.

[54]H. J. G. Beunders, “Weg met de Vlootwet” (Diss. Universiteit van Amsterdam, Amsterdam, 1984), 72.

[55]Ibid., 73.

In the 1920s and early 1930s, several international conferences, aimed at limiting armaments were organized. Although one of these conferences, the 1922 Washington Conference, resulting in the limitation of the tonnage of major warships, proved successful in limiting offensive capabilities, most conferences proved unsuccessful. In 1928, several nations, including the Netherlands, signed the Kellogg-Briand Pact, renouncing the use of war except for self-defense.[56] This international development, combined with the national pacifistic discourse contributed to tight defense budgets in the Netherlands. Dutch weapons and equipment became obsolete over time without replacements and upgrades. Although developments and innovations in warfare were recognized, the Dutch could not import weapons nor did they have the industrial base to develop their own weapons. This situation lasted until 1933 when the German and Japanese threat, represented by their massive rearmament programs caused concern. This threat led to subsequent rearmament and modernization programs in the Netherlands. Unfortunately, for the Netherlands is was too late.

The rising threat in Europe and in the Far East forced the Netherlands to rethink its foreign policy and its posture towards the League of the Nations. The League of the Nations was powerless against expansionistic Germany. In 1931, Japan went unpunished occupying Manchuria and Benito Mussolini's Italian troops fought in Abyssinia with impunity. In 1936, with the Dutch leading the way, the Oslo-Group, consisting of the Netherlands, Belgium, Luxemburg and the Nordic states, abrogated the mutual defense guarantee against external aggression as embodied in Article X of the League of Nations

[56]John T. Kuehn, *Agents of Innovation: the General Board and the Design of the Fleet That Defeated the Japanese Navy* (Annapolis, MD: Naval Institute Press, 2008), 159.

Covenant.[57] The Netherlands had officially returned to its strict neutrality policy. On 10 May 1940, German troops invaded the Netherlands. After five days of fighting and the bombardment of the city of Rotterdam, the Netherlands surrendered. The Dutch Queen and the Dutch government fled to England to form a government-in-exile. The Netherlands maintained its neutrality for the Netherlands East Indies in the Far East. As a government in exile, the Dutch government tried to build alliances with Great Britain and the United States to defend the NEI. Its neutrality inhibited any possible military alliances, but chapter 5 will discuss evidence of a secret military rapprochement with the British in the years just before the war.

On 7 December 1941, the Imperial Japanese Navy (IJN) conducted a surprise attack against the United States Pacific Fleet at Pearl Harbor. The Netherlands government-in-exile declared war on Japan seven hours later, even before the US declared a state of war.[58] This remarkable strategic shift made the Netherlands abandon a neutrality that had lasted for a hundred years. The Netherlands East Indies Forces and coalition partners formed the American, British, Dutch, and Australian Command, ABDACOM, in a desperate attempt to organize a coherent defense against the Japanese.[59] In March 1942, the IJN occupied the main islands of the NEI following the Battle of the Java Sea.

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[57]Holborn, 13.

[58]F. C. van Oosten, *The Battle of the Java Sea* (Annapolis, MD: Naval Institute Press, 1976), 12.

[59]Ibid., 14.

Organization of the Netherlands East Indies Navy

Portuguese explorers were the first to descend on the East Indies around 1509. They established a trading center on the Moluccas, one of the many islands of the East Indies Archipelago. This strong trade position was threatened by the Spanish. This dispute lasted until 1580 when the Spanish annexed Portugal. The Netherlands fought for its independence with Spain and received it in 1581. The Dutch were striving for economic independence as well and started to explore the East Indies archipelago soon afterwards. In 1596 the Dutch arrived with a small fleet in the Archipelago. To coordinate the trade efforts in the East, the Dutch parliament established the United East India Company in 1602. The Company was motivated by commerce but it was supported by a strong Dutch naval squadron. In 1619 the Dutch seized Jakarta and renamed it Batavia and established the headquarters of the United East India Company in Batavia. The next two hundred years, the Company firmed its grip on the Archipelago and exploited the islands resources. This was sometimes done by brutal violence against the local population. The Dutch fought wars with local sultans and by establishing local alliances they ruled the archipelago through subjugated sultans.[60] In 1798, after the Netherlands became a French protectorate by French occupation, the Dutch dismantled the Company. The French established a governor general on Java. In 1811 the British occupied Java and established the British East India Company in the archipelago.

[60]Gordon L. Rottman, *World War II Pacific Island Guide: a Geo-Military Study* (Westport, CT: Greenwood, 2002), 195-198.

The British returned control of the East Indies to the Dutch government in 1816.[61] The Dutch established a new order in the East Indies and made it a formal colony of the Netherlands (see figure 1). The government, traders, and local sultans still prospered from exploiting the resource-rich archipelago and its peasants. The Dutch fought many wars following the rising of local resistance. The resentment of the local population would plant a seed in East Indies soil for independence. The evolution of the Indonesian insurgence is beyond the scope of this thesis.

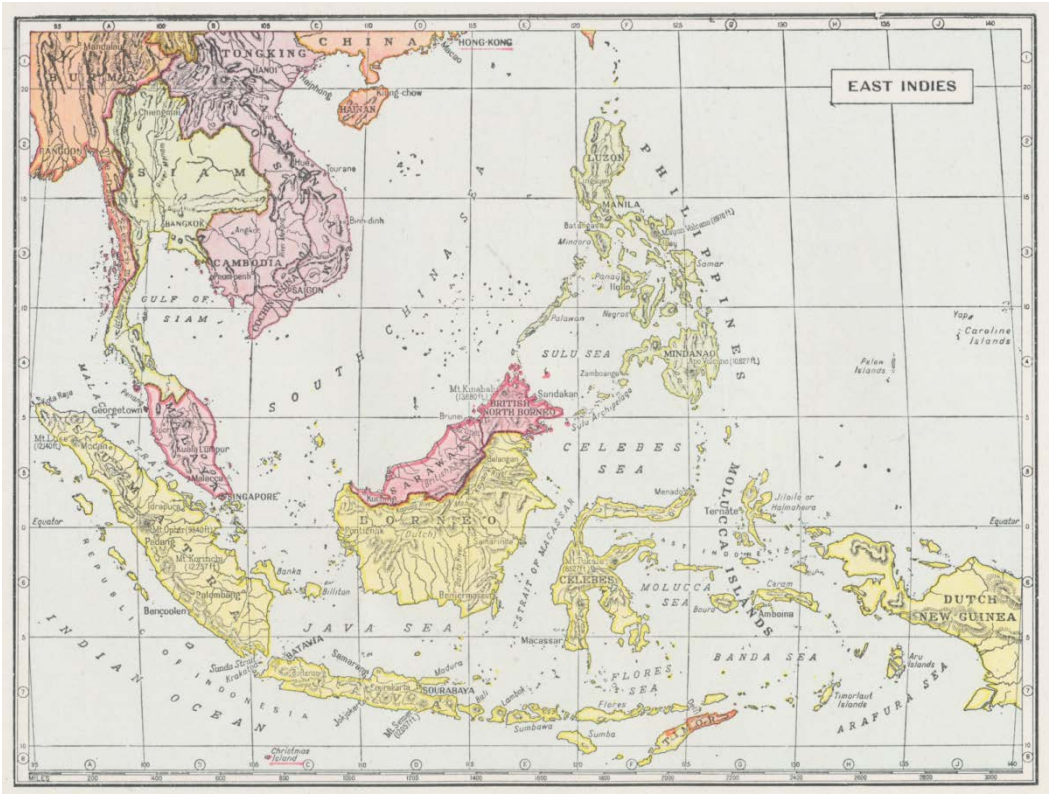

Figure 1. Map Netherlands East Indies

Source: Royal Tropical Institute (Amsterdam: Royal Tropical Institute, 1922).

[61]Ibid., 195-198.

The Netherlands East Indies was administered by a governor general that was appointed by the Queen. For defense policies, the governor acted as the Commander in Chief for the Netherlands East Indies. The governor was accountable to the Dutch Minister of Colonies. The defense of the Netherlands East Indies was de facto the responsibility of the Minister of Colonies. The governor was assisted by a cabinet, a Council of the Indies, and a People's Council, a parliamentary body with sixty-one selected by the Crown.[62] In the period covered by this thesis, the Dutch population in the East Indies numbered approximately 220,000, mostly working in government services or with trading companies. The local population consisted of almost 70,000,000 Indonesians, 1,300,000 Chinese, and 120,000 other Asians and Arabs.[63] The archipelago was rich on natural resources and its value for products of military necessity was substantial. The East Indies produced 90 percent of the world's quinine, 70 percent of the kapok, 38 percent of the rubber, and 4 percent of the world's oil production.

To defend this huge, colony, the Dutch had a substantial military presence in the Netherlands East Indies. The armed forces contained a Royal Netherlands Indies Army (*Koninklijk Nederlands Indisch Leger, or KNIL*) with its own army aviation squadron, and a strong naval presence, including naval aviation. The Army was used to consolidate and expand Dutch control throughout the Archipelago. The KNIL's main task was to expand and hold the Dutch grip on the archipelago, mainly on the Java and Sumatra islands but also protected the naval base at Surabaya. The KNIL had to fight a long term

[62]Ibid., 205.

[63]Ibid., 198.

counterinsurgency campaign over a very broad geographic scope, from East Timor to Aceh, even beyond World War One.

The Netherlands East Indies (NEI) navy comprised of three elements. It consisted of elements from the Dutch Royal Navy, subordinate to the Dutch Minister of the Navy and of local elements, financed by the Colony and in essence the Minister of Colonies. The first element of the NEI navy was the Dutch squadron. During the 1800s this was called the Auxiliary Squadron. Its main task was to defend the Netherlands East Indies neutrality and protect its economic interests against external threats. This Auxiliary Squadron became the Netherlands East Indies Squadron in 1905. Its material and personnel belonged to the Royal Netherlands Navy (RNLN) and ships from this RNLN deployed on a rotational base to the Netherlands East Indies. The protection of the Netherlands East Indies became the main task of the RNLN and the task in Europe was largely based on coastal defense. As a result, a strength of approximately 60 percent of the Royal Netherlands navy was part of the Netherlands East Indies Squadron at all times.

The second element of the NEI navy was the Netherlands Indies Military Navy (*Indische Militaire Marine).* Although materiel and personnel were from the Royal Netherlands Navy, operational use of this force was the responsibility of the Colony. The main task was to maintain and when necessary enforce order within the archipelago. This force was analogous to a coast guard, in contrast to the Netherlands Squadron, not authorized to operate outside the Netherlands East Indies territorial waters.

The third element of the NEI naval forces was the Government Navy (*Gouvernementsmarine),* tasked to conduct police tasks within the territorial waters. This

element of the navy was largely manned by indigenous personnel and corresponds to what one might call a "naval militia." Command positions and leadership were still purely Dutch. In 1939, at the start of World War Two, this part of the NEI navy became militarized and had an active role in the defense of the Archipelago against the Japanese invasion. The highest naval authority for the Netherlands East Indies was the Commander of these three elements; the Commander NEI Navy held the rank of vice admiral. Next to his command position, the vice admiral was also head of the Navy Department, situated in Batavia, on the island of Java.[64] Administratively he reported to the RNLN but operationally he was subordinated to the Netherlands East Indies highest civilian authority, the Governor General. As mentioned before the Governor General acted as the Commander in Chief of the Netherlands East Indies armed forces. This placed the NEI navy Commander in a delicate position. He had administrative responsibilities to the Commander of the RNLN, who, for his part, had full responsibilities to the Minister of the Navy. Operationally the Commander of the NEI navy answered to the Governor General, who had responsibilities to the Minister of Colonies.[65] This ambiguous command relationship would prove to be one of the factors that inhibited developing a clear strategy for the NEI naval forces and as a result inhibited innovation in the NEI navy. Further complicating this command relationship was the establishment of a naval staff within the Naval Department in the Netherlands. The Chief of this Naval Staff advised and assisted the Minister of Navy in developing defense policy. Rivalry and

[64]G. Jungslager, *Recht Zo Die Gaat: de Maritiem-Strategische Doelstellingen Terzake van de Verdediging van Nederlands-Indië in de Jaren Twintig* (Amsterdam: Van Soeren, 1991), 18.

[65]Ibid., 20.

debate over naval strategy between this Chief of the Naval Staff, and the NEI navy Commander would also prove to be an inhibiting factor for innovation.[66]

Conclusion

In summary, Dutch naval strategy from 1900 until 1942 was largely influenced by the thinking of three schools of thought. These are: Alfred Thayer Mahan, the French *Jeune Ecole,* and Julian Corbett. Mahan's theory is centered on the concept of Sea Power. It can be encapsulated as the principle that a state can gain command of the sea by destroying its enemy's main battle fleet. The *Jeune Ecole* announced a change in naval thought. It envisioned a future dispute for the commercial hegemony of the sea. The theory was based on destroying the enemy's trade. Aggressive and merciless raids with highly mobile torpedo boats against its commercial lines of communications would make a superior maritime power collapse. Countermeasures, like the development of destroyers would decrease the influence of this new school of thought and would spark a short revival of Mahan's theories. This was soon to be challenged by theories that were complementary to Mahan's theories. These complementary theories were instituted by Sir Julian Stafford Corbett.

Corbett theorized that British maritime strategy was centered on commerce. He announced maritime strategy, accentuating that the scope of naval strategy went beyond decisive battles against the enemy's battle fleet. He opined that attainment of command of the sea should be subordinated to an overall strategy based on the conflict's objectives.

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[66]G. Teitler, *De Strijd Om de Slagkruisers, 1938-1940* (Dieren: Bataafsche Leeuw, 1984), 62.

The most common situation in naval warfare is that neither side has command. He termed this disputed command.

Dutch foreign policy from 1900 to 1942 can be characterized as neutral and aloof. The Netherlands were in a precarious position in the period before World War I. Germany and Britain had both interests in Dutch neutrality. During World War I the belligerents, prompted by military-strategic and political agendas, did not violate Dutch neutrality. After World War I, the Dutch identified that membership of the League of Nations provided advantages that outweighed the disadvantages. Membership in the League of Nations prevented the Dutch government from becoming an international pariah. The perceived peace dividend, created by the demilitarization of Germany and the Kellog-Briand Pact, gave rise to a pacifist movement in Europe. This led to decreased popular support for extensive defense expenditures in the Netherlands. The Dutch neutrality policy inhibited the import of military equipment. Next to this neutrality policy, the pacifist movement in the Netherlands and disagreement about naval theories, enmity and dissension on naval policy and defense strategies between the Chief of the Naval Staff in the Netherlands and the Netherlands East Indies Navy Commander were an obstructing factor for innovation as will be described in the next chapters.

CHAPTER 3

1900-1921-STRATEGIC DRIFT

> Sheer technical innovation does not win wars. Instead, the interaction of the technical change and organizational adaptation within a realistic strategic assessment determines whether good ideas turn into real military capabilities.
> — Alan R. Millett, *Military Innovation in the Interwar Period*

Strategic Context

Study of military innovation in the Netherlands East Indies Navy in the period from 1900 to 1921 reveals a complex pattern of interaction between defense politics, inter service rivalry, intra service rivalry, a rapid development of technology, a changing geo-political environment in the Pacific, an ambiguous strategy, the lack of popular support for defense spending, and the lack of an industrial and technological base to develop and produce modern weaponry.

Until the beginning of the twentieth century, the Dutch perceived no direct threat against their colonial empires in the Pacific.[67] After the defeat of the Dutch fleet by the Royal Navy in 1811, the Dutch lost command of the seas surrounding the East Indies archipelago. The British conquered the Netherlands East Indies from the Dutch but returned the territory in 1814.[68] The Dutch became allies with the British, after the Napoleonic wars. The Netherlands East Indies were the most important economic remnants of the high tides of the United East Indies Company (VOC), the Dutch trade

[67]Jungslager, 46.

[68]Jaap Anten, *Navalisme Nekt Onderzeeboot: de Invloed van Internationale Zeestrategieën Op de Nederlandse Zeestrategie Voor de Defensie van Nederlands-Indië, 1912-1942* (Amsterdam: Aksant Academic Publishers, 2011), 39.

undertaking that went bankrupt in 1798. The remainder of the nineteenth century the Dutch colony was implicitly protected by the British. The Dutch believed that an invasion of the Netherlands East Indies (NEI) was highly unlikely until 1890. The need for a large fleet was small. Furthermore, the perception was that preservation of its vast empire in the Pacific depended on the balance of power in Europe and that maintaining neutrality in Europe was the key to preservation of its strong economic position in the Pacific.[69]

The defense of the NEI centered on the Royal Netherlands Indies Army (KNIL). The task of the weak Dutch fleet was as a subsidiary to the task of the KNIL: suppressing domestic disturbance and police actions to spread colonial rule throughout the colony.[70] Dutch influence was initially centered on Batavia (now Jakarta), the capital of the Netherlands East Indies, located on the north coast of the island of Java, and its direct surroundings. Expansion of Dutch colonial rule in the colony led to the adaptation of a new defense policy. To tailor the defense policy to the expanding territory, which was characterized by its many islands and vastness, the influence of the fleet in the defense strategy increased. The fleet proved very important for counter piracy operations, support to the KNIL during police actions, protection of the sea lines of communications between the islands and with the various areas of distribution in Europe, and protecting Dutch sovereignty.

As pointed out earlier, Dutch defense policy was based on a land component, the KNIL. The Dutch rationalized that defending the vast empire was impossible. The East Indies archipelago stretches from off the west coast of the Malay Peninsula and runs east

[69]Beunders, 24.

[70]Jungslager, 46.

above Australia to western New Guinea, a distance of 3,200 miles with a width of 1,200 miles. If the Continental United States is overlaid on the East Indies, it would stretch from the northwest end of Sumatra to Dutch New Guinea's eastern border with the Australian New Guinea territories. There are 13,667 islands and islets in the Archipelago. Put differently, the total amount of coast line in the archipelago equates to the total circumference of the globe. In the event of an external threat, the KNIL would limit its efforts to the defense of the most important island: Java.

The Dutch naval presence circa 1878 centered on a strong battleship, HNLMS *Coning der Nederlanden*, the only real battleship that the Dutch Navy ever possessed. This iron hulled ironclad turret ship was built in the period from 1871 to 1877. With its four 28 cm cannons and 20 cm. armor, it was the strongest battleship in the Pacific. Its turrets could swivel from pillar to post, a rare commodity when contrasted with other battleships in Asia, Australia and the Pacific.[71] This battleship operated from Soerabaja (Surabaya), the main Dutch naval base on Java. For reconnaissance and protection of the sea lines of communication with the Netherlands, the NEI navy employed six cruisers of the *Atjeh*-class.[72] Cruisers were the largest warships after the battleship and could pose a significant threat against an enemy's merchant shipping and sea lines of communication (SLOC).

[71]Anten, 40.

[72]Ibid.

Emerging Threats and Service Roles

The tide of the Dutch threat analysis for the East Indies turned after the commissioning of two second-class Chinese battleships in 1887, built for the Qing regime by the Germans. Although the level of professionalism and training was doubted within Dutch naval circles, on paper these ships were superior to the Dutch main battleship.[73] Additionally, an international battleship arms race was ongoing. As a result, the Japanese Imperial Navy (IJN) and the United States Navy (USN) transformed these stronger region naval powers into potential threats. The Japanese reacted to the launching of both Chinese battleships by laying down the keels of three cruisers of the *Matsushima*-class, built after French design. This change in the geo-political dynamic acted as a catalyst for initiating a reconsideration of Dutch defense policy for the Netherlands East Indies. Furthermore, due to the fast technological advances, the Dutch fleet had become obsolete. By royal decree, a committee was established to investigate new foundations for the Dutch defense policy in April 1892.[74] This committee consisted of high ranking officers from the KNIL and the Dutch Navy. Although there was still no clear enemy defined, the committee identified three main objectives for the defense of the archipelago.[75]

1. Maintaining honor and prestige of the Netherlands in the world, also from the perception of the indigenous population, by preventing the occupation of one or more coastal locations.

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[73]Anten, 42.

[74]Jungslager, 47.

[75]Ibid., 48.

2. Maintaining governance by preventing the interdiction of inter-insular maritime traffic by subversive indigenous elements.
3. The defense of Java against a direct attack.

Within this defense construct, the committee identified three major tasks for the Netherlands East Indies Navy:

1. Conducting reconnaissance in the Java Sea and its main entrances.
2. To counter violations of neutrality and *coups-de-main* in the outlying districts.
3. Attacks against an enemy's transportation fleet in the event of an invasion of Java.

These principles emancipated the role of the fleet and provided more balance in the division of responsibilities between the Army and the Navy. The new division of responsibilities generated additional animosity between both services. The navy prevented cooperation with the army in the event of an invasion on Java by focusing its efforts on protecting the archipelago against *coup-de-mains* in the outlying districts. These districts lay beyond the reach of the army, unless transported by the navy. An army reaction against the growing influence of the fleet in the defense of the Netherlands East Indies was the development of a plan to solely concentrate the defense on the *Preanger* defensive positions in the center of Java. These *Preanger* fortifications were positioned in the central highlands of the island of Java. In the event of an enemy invasion, the KNIL would retrograde to this strong defensive position in the highlands of central Java. Essential governance services and headquarters should wouldbe built within this area according to this strategy. It was an army attempt to play a central role in the defense of the NEI and to secure necessary budgets.

The naval reaction was that defense spending should be focused on the navy, instead of on stagnant defense like fortifications. The general leaning in Europe was to transition from fortifications to a mobile defense.[76] The main fear of the navy was that the NEI fleet would receive a supporting role in the defense of the archipelago, analogous to the situation in the Netherlands, where the main task of the fleet was coastal defense. The animosity between both services, in time even more stirred by bigger responsibilities for the navy and the subsequent allocation of budgets, would last until the Japanese overwhelmed the Dutch defenses in the Netherlands East Indies in 1942.

The architects of the 1892 defense policy envisioned a fleet of four "warriors" (warships) for the East Indies fleet.[77] Its squadron would consist of three "big gun" ships and one reserve. The keel of one of these envisioned warriors had already been laid down as a result of an attempt to continue the building of large battleships after HNLMS *Koning der Nederlanden* became obsolete by the technological revolutions of the time. This projected ship weighed 4,650 tons. The other three ships, launched in 1894, included HNLMS *Kortenaer, Piet Hein and Evertsen* and were not heavy enough to be defined as battleships and not fast enough to be identified as cruisers.

To support the battleships, the committee asked for cruisers. The Minister of the Navy, Minister Jansen, saw no employment for these cruisers and preferred torpedo boats.[78] This is one of the first indicators of the protracted discussion amongst the political leadership and amongst defense specialists between proponents of big gun fleets

[76]Author unknown, "Indische Militaire Belangen," *Marineblad* (1899-1900): 442.

[77]Anten, 43.

[78]Ibid., 45.

and proponents of torpedo fleets. The opponents of the torpedo fleet were strengthened by a lecture that the British vice-admiral Colomb gave at a meeting of the Royal United Services Institute on 8 June 1897. He argued that the development of the torpedo changed the nature of naval war and would influence the use of battleships.[79]

After elections in the Netherlands, the new Minister of the Navy in 1895, Minister H.M. van der Wijck argued that the fleet needed faster ships in the form of cruisers to protect the economic interests in the outlying areas of the archipelago. Furthermore these cruisers could perform reconnaissance tasks aimed at early identification of enemy transport fleets and potentially could out-maneuver escort ships of these transport fleets in a counter-invasion role. Minister van Wijck was a fervent opponent of the use of torpedoes. In the second half of the 1890s, the obsolete cruisers of the *Atjeh*-class were replaced by six cruisers of the *Holland*- and *Utrecht*-class.[80] Minister van Wijcks arguments for cruisers were remarkable. He argued that a precondition for an enemy transport fleet to land its troops was to neutralize the cruiser threat in the archipelago. Furthermore the speed, range and seagoing capacity of the cruisers made them excellent for reconnaissance tasks in the vast archipelago. Next, the Dutch cruisers would force an enemy to accompany its transport fleet by battleships, thereby weakening its fleet elsewhere and making it vulnerable to other fleets. This is clearly an indicator of a risk strategy. Additionally, the minister argued that he expected no enemy battleships in the

[79]Philip Howard Colomb, "The Future of the Torpedo," *Marineblad* (1897-1998): 257.

[80]Anten, 45.

Indies archipelago.[81] The results of the war between Russia and Japan gave evidence against this rationale in 1905. The Russo-Japanese war falsified Dutch political judgments. In 1905, seven battleships and three cruisers from the Russian East Sea Fleet passed East Sumatra after passing the Malacca Street and travelled through Dutch territory in the archipelago. The fact that Dutch reconnaissance failed to identify these movements emphasized the need for proper reconnaissance in the future, but, more important, it proved the Minister of Navy wrong.

In the intervening time, the Dutch fleet in the NEI became more and more obsolete. Other nations were building battleships at a rapid pace. The scaling up of battleships became disastrous for the Dutch shipbuilding yards that were facing increasing inadequacy. Dutch wharves and dry docks were too small to build large battleships. The maximum tonnage was 7,600.[82] This, in combination with the fact that the Dutch government wanted to stimulate its economy by financial injections in its ship industry, created a technological retardation of capital ship building. Furthermore, financial restrictions were influencing defense spending. Defense spending was based on a fixed percentage of the state budget. This caused fluctuation that correlated with public revenues, in other words, defense spending was following the economic situation. In general, the economic rise after 1890 enabled a permanent growth of defense spending. Compared to the explosions in armament spending in other nations, however, the Netherlands comparatively fell astern. In 1907, calculations showed that the average

[81]Anten, 46.

[82]J. S. van Veen, "Opmerkingen naar aanleiding der beschouwingen over defensiepolitiek en marinebeheer," *Marineblad* (1911-1912): 932.

Dutchmen contributed 7.50 guilder (the equivalent of $360 today) per year on defense spending. This was much less than the British and French paid, but almost equal to the Americans, Italians, Danish, and Austrians.[83] Around this time naval estimates in these countries began to grow disproportionally. As an example, the British naval estimates increased between 1880 and 1913 from 126 million to 643, 2 million guilders. By contrast, the Dutch naval estimates showed an increase from 12, 6 million to 19, and 8 million in the same period.[84] The Dutch were not able to keep up with the international ship building programs.

In addition, Dutch defense spending fluctuated with the political color of its government. Being a constitutional monarchy, based on a multi-party system, the main political streams were the confessional and the liberal parties. In the Netherlands the ideas of the right-oriented political parties were based on maintaining and increasing imperial power. They were opponents of reinforcing the fleet. On the other hand, the liberals' ideas were based on a limited defense and the liberal parties were more focused on internal politics in the Netherlands and on internal security within the Netherlands East Indies. Different political agenda's combined with rapidly succeeding cabinets, formed around liberals or around confessional parties, inhibited long term defense planning and budgeting.

Based on the changing geo-political situation, the Dutch government decided, by royal decree, to reconsider the architecture of the fleet for the defense of the Netherlands East Indies. The dynamics in the Pacific had changed. The Americans increased their

[83]Beunders, 28.

[84]Ibid.

influence in the Philippines; the Germans gained more influence in the Islands east of the Philippines--the Carolines and the Marianas--and had expanded their influence over the northeastern part of New Guinea. Furthermore, the British had settled in the northwestern part of Borneo. A committee was installed on 3 August 1906 to reconsider the architecture of the fleet and to contemplate the defense plans.

Torpedoes or Big Guns and Blue Water

The committee released its report "only" two (!!) years later. During these two years the government decided to build an ironclad battleship of 6,530 tons that was already obsolete before it was even launched. The premises for the reconsideration of the fleet were: an attack by an enemy fleet on the colonial empire with the purpose of taking possession of the territory and that this enemy fleet was built around a transportation fleet.[85] Furthermore, it identified that the NEI fleet had become obsolete and full protection within the archipelago was beyond the power of the Dutch fleet in the Netherlands Indies.[86] It was not possible to guarantee absolute protection. More realistically, the committee advised to task the NEI navy to: "Force the enemy to thorough preparations, by holding out a prospect of a protracted defense whilst awaiting help, should an ally be prepared to choose our side."[87] This reflects Corbett's idea of a

[85]H. D. Guyot, "Beschouwingen naar aanleiding van het Rapport der Staatscommissie 1906," *Marineblad* (1908-1909): 899.

[86]F. L. Rambonnet, "Een Beschouwing over onze Marine," *Marineblad* (1907-1908): 495-500.

[87]Guyot, 899.

fleet-in-being. The report of the committee showed some remarkable differences to earlier defense policies.[88]

First, instead of employment against violations of neutrality and coups-de-main the fleet was responsible for defending the complete archipelago. Next, the advice offered a realistic view that a unilateral defense against a powerful enemy was not feasible and that the Netherlands should also base its defense on support from allies. This principle would remain one of the basic underpinnings of the defense strategy until the defeat by the Imperial Japanese Navy in 1942. For the organization of the NEI fleet the committee designed a concept that was anathema to navalists: the fleet would act with speed and surprise and was based upon the newest technology: the torpedo. Small, fast, but highly modern torpedo boats would form the nucleus of the fleet, supported by torpedo cruisers. This line of thought was fully in line with one of the dominant naval theories of the time: the *Jeune Ecole.* Furthermore, the report proposed to make the auxiliary squadron, at the time the nucleus of the NEI navy and operationally under the command of the imperial Dutch Royal Navy, a separate entity, under the Ministry of Colonies. Efficiency and cost reductions adduced arguments in support of this advice. Naval officers argued that the NEI navy represented the kingdom of the Netherlands, not just one of its colonies. They were strong opponents of a separate colonial navy. Their main concerns were that a colonial navy would become subordinate to the colonial army, the KNIL, analogous to the position of the Royal Netherlands fleet that was responsible for the coastal defense of the Netherlands.[89]

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[88]Jungslager, 53.

[89]Ibid., 54.

The committee's other concern was that by dividing the Royal Netherlands Navy into smaller divisions, it would lose its imperial character and thereby status and eventually, priority of budgets. This chapter will later discuss the ongoing debate between proponents of a torpedo fleet and proponents of a big gun, blue water fleet, but it will prove useful to discuss one of the reasons for naval officers to argue against a torpedo fleet.[90] Torpedo fleets, flottilas of small vessels, would almost certainly be based mainly in the archipelago due to a lack of seaworthiness (i.e. not "blue water"). Transits to and from Europe were not very likely. Furthermore, battleships reflected an imperial navy more than small torpedo boats. This is one of the indicators of a growing navalist paradigm amongst naval officers that would fully emerge a couple of years later. The report of the committee did not result in major changes to policy? The report found resistance within political and naval circles and the Minister of the Navy, Minister Cohen Stuart, resigned, even before the report was officially published. Although the advice of the committee was not adopted, it materialized to a minor degree in the introduction of the first Dutch torpedo destroyers of the *Wolf*-class.[91] These destroyers had a displacement of 500 tons and had two pivoting torpedo launchers. The NEI navy would receive these destroyers between 1910 and 1913. As mentioned before, the report did not result in major changes and met with resistance from political and naval circles, but it roused interminable discussions about the architecture of the fleet that had to defend the

[90]Blue water is a term that refers to ocean-going big ships that can sail outside the littorals for long periods on the open ocean, and thus interdict enemy shipping much further away. It also refers to deep draft vessels that have trouble navigating close into shore as opposed to lighter draft torpedo craft. Source, Commander John T. Kuehn, U.S. Navy (retired), 10 April 2013.

[91]Jungslager, 54.

Netherlands East Indies: a torpedo fleet or a blue water gun fleet. This discussion runs like a continuous thread through the defense policy for the NEI navy in the period covered by this thesis. The proponents of a torpedo fleet readily acknowledged the superiority of the battleship fleet over the torpedo in general, but argued that if the government could not equip the fleet with ships with a displacement over 7,000 tons, they did not see the value of the little battleship fleet. They would rather see it melted down for submarines and torpedo boats.[92]

The arguments that the proponents of a torpedo fleet advanced were multitudinous. Above all, they argued that the Dutch lacked the industrial base to build a credible blue water gun fleet that could dispute the command of the sea. A strong enemy fleet could topple the Netherlands East Indies fleet rather easy. The potential enemy however wanted to generate speed, to prevent an onrushing Dutch ally from influencing the battle for the seas around the archipelago. A more flotilla-type torpedo fleet, however, would be more difficult for an enemy fleet to defeat with a first blow. An enemy transport fleet would always face a torpedo attack, even when command of the sea had been achieved. The proponents of a battleship centric fleet or blue water gun fleet had arguments numerous as well. First, the advocates of artillery blue water fleet argued that the canon will always be a decisive factor in battle.[93] Next, they argued that the torpedo boat could only operate at night. Additionally, they criticized the lack of reach of the torpedo boat, one of the major disadvantages within the vast East Indies archipelago.

[92]L. van Verre, LCDR RNLN, "De Defensie van Indie," *Marineblad* (1915-1916): 1.

[93]H. E. van Asbeck, "Vragen gericht aan de voorstanders eener artillerievloot," *Marineblad* (1910-1911): 453.

Another disadvantage was the lack of seaworthiness.[94] Furthermore, it was contended that the torpedo fleet could not operate without battleships, as the Russo-Japanese war had seemed to prove. This war had convinced many naval gunners that naval artillery was still the weapon of decision.[95]

The Russo-Japanese war was thoroughly analyzed by Dutch naval officers. Various publications about the Russo-Japanese war appeared in *Marineblad,* the periodical in which naval officers shared views and opinions similar to the *United States Naval Institute Proceedings*.[96] This voluminous magazine informed the naval officers about technological, tactical and doctrinal developments within the Dutch and foreign navies. One of the lessons that the Dutch identified from the Russo-Japanese war was the most likely distance at which future naval engagements would most likely be fought. It was identified that the two major battles of the war, the battle around Port Arthur and the battle at Tsushima, were fought at distances between an average of 4,000 and 6,000 meters.[97] Additionally, it proved that the ramming technique was not applied during the battles. Next, the effectiveness of the torpedo was doubted. Torpedo boat attacks were not very successful during the battles. For example, twelve Russian warships that had lain anchored in Port Arthur, fully lit and well visible for approaching Japanese torpedo boats.

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[94]Ibid., 456-460.

[95]Ibid., 458.

[96]For the founding of the Naval Institute see John T. Kuehn, "The Martial Spirit—Naval Style: The Naval Reform Movement and the Establishment of the General Board of the Navy, 1873-1900," *The Northern Mariner/le marin du nord* 22, no. 2 (April 2012): 121-140.

[97]Author unknown, "De Lessen uit den Japansch-Russischen Zeeoorlog," *Marineblad* (1905-1906): 884.

Ten torpedo boats fired eighteen torpedoes and managed to damage three ships. The damage proved to be minor and the ships would be repaired within four months.[98] Another example is the long series of torpedo attacks against the Russian battleship *Sebastopol*. The already badly battered ship managed to keep torpedo boats at bay with a combination of its main guns and search lights. Torpedo nets had proved to be very effective against torpedo launches from the torpedo boats. The unfavorable sea conditions prevented the torpedo boats to effect mass attacks against the battleship that survived the engagement. The Japanese had fired 150 torpedoes, of which most likely only 4 hit the battleship.[99] In sum, the torpedo attacks had not been very effective and the torpedo boats proved to be subject to the weather and sea conditions. These lessons would be grist on the mill of the battleship fleet proponents. The first year of World War I would prove the effectiveness of the torpedo. At that time another weapon would become a standard part of the arsenals of the belligerents that was noticed by the adaptive Dutch: the submarine.

The defense strategy for the Netherlands East Indies demanded a review. The strategy was still based on the premises of 1892. Influenced by the international arms race for battle fleets, the emerging threat of Japan, and warned by the growing tensions in Europe, the calls for a strong fleet increased in the Netherlands. The Minister of the Navy of the time, Minister J. Wentholt was a strong proponent of battleships. He was nicknamed "John Gun."[100] Wentholt managed to pass a bill that by royal decree that established that the NEI fleet would, next to torpedo boats and submarines, include a

[98]Ibid., 893.

[99]Ibid.

[100]Beunders, 83.

number of battleships. But the execution of this decree was also bound by the limitations of the Dutch shipyards, which were limited to 7,600 tons. The Dutch could not build battleships to modern standards.[101] By this time navalist ideas were planted into Dutch soil. This was much later than in other nations.

This delay was caused by the lack of a significant weapon industry, the lack of a powerful industrial lobby, the political power of the liberal political parties, and the lack of a boulevard press that was able to stir up navalist sentiment as had been done in other countries.[102] Furthermore, the Dutch navy lacked a naval war college at the time--an institution that proved fruitful in other countries to spread navalist theory. The navalist paradigms caused opposition from the naval officers against the building of battleships of maximum 7,600 tons. Minister J. Wentholt stepped down and made room for Minister of War, Minister H. Colijn who became dual hatted for a period. This energetic minister, a former naval officer with a predilection for battleships, established a committee after demands by the liberal parties to develop a new defense plan for the Netherlands East Indies.

Under the influence of a hectic international fleet arms race and under the changed geo-political situation in Asia, the call for a powerful fleet emerged within the Dutch navy. Another reason for the establishment of the committee was that its report had to change the growing impasse and the dragging discussion about the architecture of the fleet. This committee included political heavyweights like the Minister President and the Minister of Colonies. This would underscore the urgent nature of the committee.

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[101]Van Asbeck, 29.

[102]Beunders, 33.

Another reason for the composition of the committee was a change in legislature that demanded that for defense spending, that included the involvement of both the Ministry of Navy as the Ministry of Colonies, a naval bill was needed. This committee would ensure an efficient passage of the naval bill that had to pass before the summer of 1913 due to the upcoming elections for that year. The committee formulated its task as to identify.[103]

1. What is the most likely enemy threat?
2. What are the consequences if the Netherlands loses its colonial possessions?
3. What measures must be taken to prevent such a loss?

The Threat of Imperial Japan

Since the beginning of the twentieth century there was a growing level of awareness of the emergence of Japan as a world economic and military power. The committee identified Japan as the most likely enemy for future conflict. Japan needed resources for its growing economy and space for its growing population. It will prove useful to describe the rise of the Japanese empire in the region. Japan defeated the Chinese in 1894 in the Sino-Japanese War. The war was fought over the hegemony of the Korean peninsula. After this short war Korea maintained its independent status but Japan gained influence in Korea. In accordance with the Shimoneski peace agreement, the Pescadores islands and Formosa now formally belonged to Japan and China leased the peninsula of Liaotung (Liaodong), with its important ports Port Arthur and Dairen, to

[103]Jungslager, 55.

Japan. From these areas Japan could project its power into Manchuria and its hinterland. Several European powers perceived this growing Japanese influence as a threat and Russian, German and French special envoys advised the Japanese government to give up its interests in Liaotung to prevent a potential conflict with Russia. Japan acknowledged the potential for conflict and gave in, but became agitated that Russia now had possession over the ice free ports of Port Arthur and Dairen.

Japan's growing power changed the geopolitical dynamics in Asia. During the Boxer war in 1902, Japan created a naval alliance with England. In 1904, the Russo-Japanese War would even more change the balance in the Pacific. The Japanese fleet under Admiral Togo Heihachiro defeated the Russian Eastern Sea fleet at the battle of Tsushima. The Russian defeat opened the route to the mining areas in Manchuria, of vital importance for its minerals to Japan. Furthermore, Japan was allocated extensive fishing rights and gained access to the southern area of Sakhalin Island. In 1905, after the assassination of the Japanese resident general in Korea, Japan annexed Korea.[104] In 1906, Japan established the South Manchurian Railway Company that operated the railway between the Manchurian iron ore mines and the port of Dairen. Fully aware of the latent Russian threat, Japan signed a peace treaty with Russia that effectively divided Manchuria between a Russian and Japanese sphere of influence.

The Russo-Japanese war was not without consequences for the Netherlands East Indies. From the start of the war, the NEI fleet was focused on preventing violations of neutrality. Two days after the Japanese fleet attacked the anchored Russian fleet in Port Arthur, the Japanese government threatened the Dutch government that granting

[104]Jungslager, 76.

permission to Russian ships to load coal in the East Indies port of Sabang would not be without consequences. Japan considered this act as: "converting the territory of the Netherlands into a base of hostile operations against the Empire of Japan."[105] The Dutch government became concerned about the Japanese expansionism and its potential designs on the resources of the Netherlands East Indies. In 1911, after a trip through the East Indies Archipelago, a Japanese Member of Parliament, Takekoshi, wrote a comment about the excessiveness of "a small country like the Netherlands with its extensive, fruitful colony" in his book *Nangokuki* or the *Chronicle of Southern Lands*.[106] For the Dutch government it was clear that it was facing a turning point in Japanese relations with South East Asia and that this would become the next region for Japanese expansion.[107] For their part, the Dutch faced a concrete problem, namely, the Japanese threat, on which they would further concentrate the development of the Netherlands East Indies Navy in the inter bellum period.

The Dutch government would build its strategic concept on the Japanese threat and would base the architecture of the East Indies fleet on the capabilities and most likely course of action of the Imperial Japanese Navy. In his essay "Innovation: Past and Future" in the influential book *Innovation in the Interwar Period*, Williamson Murray defines specificity as a factor that worked to further the path to success or failure in

[105]Jungslager, 78.

[106]Ibid.

[107]Kamerstukken I/1914/ Behandeling Staatsbegroting Dienstjaar 1914, Mededeeling ingekomen stukken, 17 maart 1914, 419.

innovation.[108] He asserted that in virtually every case of innovation in the interwar period (1919-1939) could be found the presence of "specific military problems . . . which offered significant advantages to furthering the achievement of national strategy."[109] Furthermore, he maintained that a distinct problem, which the military institution involved has vital interests in solving, is a requirement for significant military innovation.[110] The anticipated enemy and the anticipated area of operations were factors that shaped the perceptions of the Dutch government how to design the defense for the Netherlands East Indies and were factors that contributed to innovation.

The consequences for the loss of the colonies were very clear. By losing them, the Netherlands would lose its strong economic position in the region, would lose its natural resources and it would lose international prestige. One of the conclusions of the committee was that preservation of the colonies was undeniably of vital importance to the welfare of the Netherlands. The loss of the Netherlands Indies would be a national disaster just for the reason that the Netherlands had invested one milliard guilders alone. Furthermore, the total amount of annual revenues from the colonies approximated one hundred million guilders. Neglecting the defense of the Netherlands East Indies would therefore be an act of foolhardy, irresponsible, flightiness.[111] In short, the report of the committee blended the defense of the Netherlands Indies with the Dutch vital economic interests in the region.

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[108]Murray, "Innovation: Past and Future," 311.

[109]Ibid.

[110]Ibid.

[111]Beunders, 34.

The defense of the archipelago would no longer be grounded on the protection of the Island of Java and denying violations of neutrality but instead became oriented on the protection of the entire archipelago. The Netherlands East Indies navy was to prevent invasions throughout the archipelago. Besides fighting against the enemy main battle fleet, the Dutch fleet had to protect its own sea lines of communications to protect its economic interests. To achieve this, the Netherlands East Indies had to maintain command of the sea in the waters within the archipelago. In essence this meant command of the sea in the Java Sea and its three main approaches in the north and the east of the archipelago.[112] This was called local command of the sea, in line with the ideas of Corbett. Only a strong, battleship centric blue water fleet could achieve this local command of the sea. Arguments against a torpedo centric fleet were, according to the committee, that torpedo boats and submarines posed unsuitable habitability conditions due to the harsh Pacific climate. Furthermore, the torpedo boats could not develop the military power to operate with surprise within the vast archipelago. Additionally, the torpedo boats could only operate successfully by night against large warships. Last, it viewed, the immature submarine concept as only suitable for a supporting role: coastal defense. The submarine had not yet demonstrated its lethality in war. The fleet, as envisaged by the committee and its military advisors, would be built around nine battleships of 21,000 tons each. Furthermore it should have a frame (as it was literally called) of small material, consisting of six torpedo cruisers, eight destroyers of 500 tons, forty- four torpedo boats of 300 tons, twenty two submarines of 300 tons and six minesweepers. One of the most remarkable things about the architecture of the new fleet

[112]Ibid., 37.

is that the Minister of the Navy, Colijn, requested the British shipyard Vickers and the German Germania shipyard to develop designs for the new battleship, aimed at 25,000 tons. The Dutch had waived their policy of national shipbuilding that aimed at reinforcing its own economy and at maintaining a level of independency, of vital importance to its neutrality policy.[113] The report met a storm of criticism, especially from the side of the Minister of Finance, Minister van Gijn. He advocated that the Dutch financial position should be the premises of the architecture of the fleet. He advocated that it was unrealistic to spread the financing of this fleet over the next thirty-five years. This would be irresponsible toward future generations. Furthermore, Gijn contended that this fleet could not match the battle fleets of the potential enemies, and that the projected year that this fleet would reach its full potential would be only after twenty years.[114] Others contended that this battle-centric fleet would demand more personnel than a torpedo centric fleet due to its sheer size and manning. It would cause an increase of three thousand sailors. They argued that the navy could never man this fleet. The idea to fill the ranks with an indigenous contingent was rejected by the Governor General of the Netherlands East Indies and the Naval Staff. Natives were considered inferior and unreliable.[115]

The Minister of the Navy, a member of the right wing dominated parliament further developed the ambitious fleet design into a fleet bill. The aim was to pass the bill before the elections of July 1913. Due to delays the bill was not discussed in Parliament before the elections and the social democrats and the liberals won the elections. The new

[113]Anten, 174.

[114]Beunders, 35.

[115]Ibid., 34.

government did not entirely reject the proposed fleet bill but its new Minister of Defense; Minister Rambonnet reduced the number of proposed battleships to four. The newly appointed Minister of Finance; Minister A.E.J. Bertling, however, argued that the Dutch could only afford one battleship and proposed amendments to the bill.[116] This development alarmed the naval staff and the Dutch Queen pressed the government to lay down the keels of more battleships. The navy increased its propaganda and the Royal Dutch Association *Onze Vloot* (Our Fleet), an independent association similar to the Navy League in the United States, founded in 1906, aimed at cultivating the knowledge and interest for the Royal Netherlands Navy with all the nationals, colonies and other countries, put out a brochure "the threat to our national prosperity" in 1913.[117] This brochure warned about the economic consequences of the loss of the Netherlands East Indies and advocated a powerful navy. Furthermore shipbuilders and companies with economic interests in the Netherlands East Indies and who financially supported the association advocated for a strong defense of the archipelago. The conventional adage was: "Indies lost, all lost."[118]

The predominant discourse became the idea that if a strong navy was feasible it should be built. That was the responsibility of the Dutch had to their trade, its merchant shipping, to protect the colonial possessions and the obligation to the public interest.[119]

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[116]Beunders, 37.

[117]Ibid., 38.

[118]Ibid.

[119]C. Kruys, "Een beschouwing over onze Marine," *Marineblad* (1907-1908): 497.

The parliament, influenced by public opinion and the Crown, prepared the bill, again based on four battleships, for legislative assembly. The fleet bill that had to be passed through legislature consisted of four battleships of 25,000 tons and one unmanned reserve battleship of the same tonnage, five cruisers of 4,000 tons, and seven submarines of 570 tons.[120] These ships, complemented by the already operational submarine and eight destroyers would form the Netherlands East Indies fleet that had to withstand Japanese imperialism. The outbreak of World War I caused the government to decide to hold the draft for representation.[121]

The Impact of World War I

The onset of World War I made clear that the Dutch could never realize their ambitious battleship-centric fleet. The belligerent parties (it was at the start not yet decided which shipyard would receive the bid for the battleships, the British or the German) were oriented on arming their own fleets. Furthermore, materials to build ships were in short supply.[122] Concerned by the geopolitical situation and uncertain about the Japanese posture in the war, the Dutch understood that its obsolete fleet in the East needed modernization. Based on pragmatism, the Minister of Defense, Minister Rambonnet proposed to start building ships that were within the limitations of the national ship building industry: submarines and cruisers up to 7600 tons. He advocated for two cruisers of the *Java*-class. Furthermore he advocated building four more

[120]Anten, 177.

[121]Ibid., 189.

[122]Ibid.

submarines. His argument was that it was feasible to build these ships, recognizing how the short supply of materials would constrain any fleet design and that it needed to be built rather than waiting any longer.[123]

The tasks for the cruisers had significantly changed to the tasks as identified by the committee of 1912: reconnaissance for the submarines and protection of the submarines against enemy ships. It was evident that the position of the submarine within the Netherlands East Indies navy fleet had changed: from a supporting role to a central role.[124] The conditions of World War I and the subsequent shortages of building materials inhibited completion of the two cruisers and four submarines. For special parts, the Dutch were depending on German contractors and logically the Germans focused on its own war economy. This caused significant delays in the building programs. As a result, the Netherlands East Indies fleet became more and more obsolete.

The course of the first year of World War I convinced the Dutch and the government of the effectiveness of the submarine.[125] Discussions between the advocates of a torpedo fleet and battleships flared up again. A strong discourse in favor of the submarine emerged. This was reinforced by the already mentioned successes of the German submarines but also by a publication of the influential British Admiral Sir Percy Scott and the sinking of three British armored cruisers by German submarine U9 close to the Dutch coast on 22 September 1914. Furthermore, the Dutch government was impressed by the fact that the British battle fleet was relocated to the Northern part of

[123]Anten, 190.

[124]Ibid., 192.

[125]Ibid.

Scotland due to the German submarine and mine threat.[126] Sir Percy Scott contended in a publication of the *Times* that" under the contemporary circumstances he saw no use for the battleship and very little employment for fast cruisers. What we require is an enormous fleet of submarines and aero planes and a few cruisers. In my opinion, as the motor vehicle has driven the horse from the field, so had the submarine driven the battleship from the sea."[127] Although there was some resistance amongst naval officers against the abandonment of battleships, allegedly due to career perspectives and concerns for budget allocations, the start of World War I marked the path towards a submarine-centric torpedo warfare concept in the Netherlands.

As mentioned before, the success of German submarines was closely monitored within naval circles and within the Dutch government. Discussions in 1914 were centered on what type of submarine should be build. Adapting the design of the successful German submarines of 1914 could result in obsolescence when they were launched. Building times for the Dutch shipyards were significantly increased due to the lack of materials. At that time, the Dutch had one submarine operational in the Netherlands East Indies, the *KI*. The Dutch introduced the submarine into its inventory in 1906. This submarine, the *OI* was designed to operate in the Atlantic Ocean and was designed to conduct coastal defense tasks in the shallow waters near the Dutch coast.
The *KI* was designed to operate in the vast Indies archipelago. The *KII* through *KX* would be built between 1915 and 1923. The long building times are characteristic for the

[126]Ibid.

[127]Sir Percy Scott, in article in Times of 9 June 1914 "Battleships and Submarines," *Marineblad* (1914-1915): 374.

marginal Dutch industrial base. Acknowledging the high pace of innovation, the timing of the start of building became an important factor. The Dutch were fully aware of the technological developments with the belligerents for three reasons. First, although the Netherlands adopted a neutrality policy, the Dutch naval staff maintained its information current by frequent contacts with the British Admiralty and the German naval staff. Additionally, the Dutch enhanced their defense attaches positions in the belligerents'countries. In secrecy, the defense attaché in Berlin received full reports from the Germans on submarine warfare.[128] These lessons on submarine warfare, as identified by the Germans, were introduced within the Dutch navy. Last, the Dutch interned a significant amount of war equipment from the belligerent forces.[129] Equipment that strayed in Dutch territory was used for reinforcing and modernization of its own armed forces. The Dutch government bought two interred submarines from the belligerents, one submarine from the Germans and one submarine from the British in 1915. These three factors contributed to the import of highly innovative ideas and technology into the Netherlands. They also enhanced innovation within the Netherlands East Indies navy.

After World War I the climate for the modernization of the fleet was not very favorable in the Netherlands. As discussed in chapter 2, the establishment of the League of Nations in 1919 created the perception of enduring peace in Europe. The Dutch government decided however, that, although the peace in Europe was in a fragile state, the obsolete Dutch navy was in a bad state. The fleet had to stay suitable for its assigned tasks. The government realized that it had to speed up the completion of the ships that

[128]Anten, 206.

[129]Kamerstukken II 1917/393 9 februari 1917, 1511.

were waiting for the much needed materials at the Dutch yards. This had to be done in a political climate where various parties questioned defense spending. The Dutch navy was facing enormous budget cuts.

To investigate feasible options to reinforce the fleet within a climate of reductions, the Dutch government applied a proved method: the establishment of a committee for the defense of the Netherlands East Indies. The government ordered the establishment of a committee, led by naval officer A.F. Gooszen to design a balanced fleet.[130] The purpose of the fleet was to delay the enemy in the archipelago as long as necessary to prevent the enemy from establishing local command of the sea, to attrite the enemy transport fleet within capabilities and to interdict the enemy lines of communications.[131] It is clear that the Dutch were relying on support of one of the allies, most likely the British. Support for the British became a basic underpinning of the strategy for the defense of the Netherlands East Indies.

The conclusion of the committee was that the nucleus of the Netherlands East Indies fleet should be composed of submarines. The specifications of these submarines were:

1. Speed: 15 knots
2. 1 canon of 7.5 or 10 cm
3. Long distance torpedoes
4. Displacement: 800 tons

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[130]Jungslager, 89.

[131]Kamerstukken II Memorie van Toelichting, Kamerstuk 320, ondernummer 3, 1921.

Some of these submarines, its design mirroring the German VII type submarine, were already keeled at the Dutch yards and could be launched in 1922. The total amount of submarines for the Netherlands Eat Indies was projected as twelve submarines for 1928. Furthermore the committee advised the following components to complete the fleet of, which half of the proposed strength had to be reached in 1928.[132]

1. 4 cruisers
2. 4 submarine minelayers
3. 4 minelayers
4. 1 submarine tender
5. 72 reconnaissance (floating) planes
6. 36 fighters

It is evident that this proposed fleet was built around the submarine. The cruisers could protect the submarines against enemy surface units and would provide reconnaissance. The reconnaissance planes could give the submarines enough reaction time to reach attack positions. The submarine tender could ensure the necessary reach in the vast archipelago. Furthermore, the minelayers could channel the enemy to the areas were the submarines would be employed. Chapter 4 will provide a more in-depth discussion of the innovative submarine warfare concept that the Dutch developed after 1922. The Dutch government pushed the development of a fleet bill that had to pass legislature during a fiscal debate in fiscal year 1922. Two events would strongly influence the approval of this ambitious fleet plan: the emerging pacifist discourse in the

[132]Ibid., 3.

Netherlands after the establishment of the League of Nations and the Washington Naval Conference of 1921-1922.

Conclusion

The Netherlands received the Netherlands East Indies back from the British conquerors in 1814. The Netherlands East Indies were of vital economic importance to Dutch prosperity. Before 1892 the Dutch perceived no threat in South East Asia and estimated an invasion from a regional or global power as highly unlikely. The defense of the Netherlands East Indies was centered on the island of Java. The Royal Netherlands East Indies Army was primarily responsible for the defense and the Netherlands East Indies navy played a supporting role. The changing geopolitical situation in South East Asia caused the Dutch to reconsider their defense policy and architecture of the Netherlands East Indies fleet. China started building capital ships and initiated an arms race that was soon followed by the United States and Japan, effectively transforming these countries to major naval powers. Other powers like France and Germany had also increased their influence in the region. The Dutch established a committee in 1892 to revise the defense plan. As a result of its report the role of the navy expanded. This caused rivalry between the navy and its sister service, the army. The Dutch government tried to keep up with the international arms race for battleships but the Dutch industrial base was too small to build capital ships. The Dutch kept building warships that were no match to the capital ships of other powers in the region. As a result the Netherlands East Indies fleet became obsolete. The emergence of Japan as a regional power created concerns for the Dutch. The Japanese had defeated the Russians during the Russo-Japanese war in 1904-1905 and Japan was in need for markets for its growing economy

and space for its expanding population. Based on this threat the Dutch government decided to establish a committee to review the defense policy and the architecture of the Netherlands East Indies again. By this time the torpedo was introduced into the arsenal by many nations. Although the Dutch had identified important lessons about the employment of torpedoes and torpedo boats, there was a growing movement amongst naval officers and politicians in the Netherland in favor of the development of a torpedo fleet for the defense of the Netherlands East Indies. The debate between advocates of the torpedo fleet and blue water, big gun fleet would continue for decades, causing delay in political decisions and the allocation of financial resources. The committee advocated for a fleet centered on the torpedo boat, supported by fast cruisers. This report created resentment within naval and political circles and the advice was never implemented.

In 1912 the government established a committee for the defense of the East Indies again, to improve the defense strategy that dated from 1892. Around this time navalism had found its way into the Netherlands. Furthermore a national sense of urgency had emerged that maintaining the rich colony was of vital importance for the Dutch. The committee designed a battleship-centric fleet that would have to fight for the command of the sea against the most likely enemy, the Japanese, in the waters around the Indies archipelago. The Dutch abandoned their policy of building ships at Dutch yards and invited British and German vendors to build battleships. The report was developed into a fleet bill that had to pass legislature in 1913. The start of World War I caused the government to hold the fleet bill in representation. The projected ships could not be built due to the fact that the belligerents used their industry for their own war efforts. Materials to build ships were in short supply. The Dutch decided to take a pragmatic approach and

started building submarines at their own yards. This would be the start of a submarine-centric fleet that would form the nucleus of the Netherlands East Indies fleet until the World War II. During World War I the Dutch tried to use the lessons that the belligerents learned. A robust defense attached posture, contacts with the British Admiralty and the German naval staff, and the internment of weapons like aircraft and submarines imported highly innovative know-how into the Dutch armed forces. The Dutch would use this know-how for the building of their ships and airplanes.

After World War I, the League of Nations and the growing anti-war sentiment put major strains on the defense budgets. The Dutch government realized that the fragile peace and the emerging Japanese threat mandated a strong navy in the Netherlands East Indies. A committee developed proposals for a fleet that could defeat a Japanese invasion by attacking the transport ships. The committee was constrained by marginal budgets and developed a more modest option. The architecture of the proposed fleet was centered on the submarine. Furthermore, the committee advised the government to build a balanced fleet that would, next to the submarine, consist of cruisers, destroyers and aircraft in support of the submarine fleet. This proposal had to be developed into a fleet bill. The 1922 Washington Conference and the anti-war discourse, coupled by the economic depression would influence the further development of the Netherlands East Indies fleet. The next chapter will investigate the influence of the Washington Conference and the anti-war discourse on defense budgets and how the Dutch established a naval air service, developed wolf pack techniques and combined all the elements of the fleet into an innovative operational fleet concept.

CHAPTER 4

1922-1930: THE BIRTH OF AN INNOVATIVE SUBMARINE WARFARE CONCEPT

> A litmus test for any military institution confronted with the need for substantive peacetime innovation is a willingness to examine past military experience with something approaching the degree of objectivity.
>
> — Barry Watts and Williamson Murray,
> *Military Innovation in the Interwar Period*

Peace Dividend Inhibits Modernization

The 1922 concept fleet-bill met with significant political and popular resistance. Three major conditions caused reservations against rising defense spending. First, the war-weariness of the Dutch population reduced popular support to the increase of defense spending after World War I. Second, the 1922 Washington Conference halted the international arms race for capital ships and eased tensions between the major powers of the time. Third, the League of Nations, aimed at preventing future conflict, reduced the enthusiasm for extensive defense spending.

In the period between the 1919 armistice, and 1925, the Dutch economy went through a full economic cycle: it went from a conjuncture upswing in 1918 to a depression in 1925.[133] Although Dutch industry had already recovered from initial setbacks from the start of World War I in 1915, it would take until the end of the war for the economy to flourish again. In the last year of the war it was believed by the Dutch Government that the belligerents' inward focus--aimed at dismantling its war economy and rebuilding their own economy--would create opportunities for neutral states to

[133]Beunders, 68.

penetrate the international markets.[134] The destruction of productive resources of the former belligerents would create better sales potential.[135] 1918 showed an increase of Dutch export and import. Furthermore, the Dutch population brought their savings back into circulation. The Dutch economy was flourishing. But the internal situation was not as good as perceived in 1919. Wage increases and a decrease of labor productivity, caused by a shorter work week, increased price levels.[136] The situation was even worse throughout the former belligerent countries, which experienced difficulties transforming from a wartime industrial base. The results of the widespread economic crisis emerged in an increase of unemployment and bankruptcy in the Netherlands. Furthermore, the Dutch national debt had increased due to expenditures on the massive mobilization, aimed at guarding strict neutrality and ensuring food supply. Defense spending, a fixed percentage of public revenues, came under pressure. A fleet bill, and the subsequent increase in defense spending and taxes, became anathema to the battered Dutch population.[137]

The senselessness of World War I was felt everywhere in Europe at the time. The Netherlands had not been involved in the turmoil of battle due to its neutrality policy, but the shocking consequences of the battle were observed by the Dutch. Although it had no direct experiences with casualties, war damage and disabled ex-servicemen, the Netherlands became acutely aware of the destruction of the bloody war. Furthermore, the Dutch also experienced fear, hunger, humiliation and powerlessness due to the war that

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[134]Ibid., 68.

[135]Ibid.

[136]Ibid.

[137]Ibid., 71.

was waged so close to its fragile borders. The establishment of the League of Nations gave hope to the Dutch population. This collective security organization promised to prevent future conflict. The establishment of this organization contributed to a belief that no more wars would be waged. Next to anti-war sentiments, pacifistic discourses emerged around at this time in the Netherlands [see again chapter 2]. The 1922 Washington Naval Conference also contributed to the popular feeling that future conflict was unlikely.

The Washington Conference established tonnage ratios for the capital ships of Britain, the United States, Japan, France, and Italy.[138] The need for a limitation on arms was twofold, for financial and for security reasons.[139] One of the imperative reasons to end naval competition was the vast expenses that the major powers dedicated to the building of capital ships. The percentage that the major powers spent on armament was disproportionally high and did not contribute to addressing the financial crisis. The other, even stronger reason for the conference was security. The extravagant expense was a constant menace to the peace of the world rather than an insurance of its preservation.[140] Analysis of the conditions during the preamble to World War I suggested that the existence of military and naval competition intensified the animosity of one rival to the other. Naval competition not only made war between Japan and the United States a

[138]R. L. Buell, *The Washington conference* (Diss, New York: Faculty of Princeton University, Appleton and Company, 1922), 371.

[139]Ibid., 145.

[140]Ibid., 146.

probability, but it injured the relations of the United States with the British.[141] The naval program of the United States, along with its refusal to join the League of Nations, naturally aroused the suspicion of the British as to the end of the American motives.

Despite the overwhelming necessity for disarmament no one nation could disarm alone. If it were bold enough to do so, its very existence would be threatened by the powers who continued to arm. An agreement on disarmament would leave the comparative security of all signatories intact. Despite several general protests within Japan against participation of the conference, the Japanese realized they could not refuse participation. Such a refusal would be an open confession of their ambitions in the Pacific.[142] The official agenda shows that discussion topics were: limitation of naval armament, rules for control of new agencies of warfare and limitations on land armament.[143] The conference resulted in nine treaties and twelve resolutions. One of the most influential treaties would be the Treaty for the Limitations of Armaments (the so-called Five Power Pact or Washington Naval Treaty). This treaty was signed between the United States of America, the British Empire, France, Italy, and Japan. In this treaty the contracting powers agreed to limit their naval armament to the numbers as agreed upon. These numbers, expressed in replacement tonnage were: 525,000 tons for the United States, 525,000 for the British Empire, 315,000 tons for Japan, and 175,000 tons for Italy and France.[144] These numbers equaled to a ratio of 5:5:3:1.75:1.75.[145] Furthermore, no

[141]Ibid., 146.

[142]Ibid., 150.

[143]Ibid.

[144]Ibid., 375.

capital ship was to exceed 35,000 tons with 16 inches as the maximum gun size for the main armament. Additionally, in article XIX to this treaty the powers agreed that the status quo at the time of the signing with regard to fortifications and naval bases would be maintained in their respective territories and possessions in the western Pacific. Also, these same powers signed a treaty limiting the use of submarines and noxious gases in warfare.[146] Last, in the Four Power Treaty between the United States, the British Empire, France and Japan, the contracting powers agreed between themselves to respect their rights in relation to their insular possessions and insular dominions in the region of the Pacific Ocean.[147] It was designed to urge the contracting powers to hold a joint conference in the event of a developing controversy arising out of any Pacific question. The Netherlands participated in the Washington Conference. The Dutch signed a treaty between nine powers pertaining to matters concerning China in which they expressed "the desire to adopt a policy designed to stabilize conditions in the Far East, to safeguard the rights and interests in China, and to promote intercourse between China and the other Powers upon the basis of equality of opportunity."[148] This Nine Power Treaty was signed by: The United States of America, Belgium, The British Empire, China, France, Italy, Japan, the Netherlands and Portugal. During the conference the Dutch head of delegation, Minister of Foreign Affairs Mr. Dr. H.A. van Karnebeek had strong discussions with his

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[145]Jungslager, 121.

[146]Buell, 394.

[147]Jungslager, 121.

[148]Buell, 405.

British counterpart on the limitations of submarines.[149] The British, strong proponents of limitations on submarine warfare, wanted to ban the submarine. World War I had demonstrated to the British the effectiveness of the submarine against its merchant fleet. Furthermore, other countries could dispute British naval hegemony with small submarine-centric fleets. The British wanted to maintain naval hegemony, next to the United States. The British argued that smaller nations, like the Netherlands, would be well advised to guarantee their safety by alliance, not by a strong fleet.[150] The British contended that the Dutch concept fleet bill went against the intent of the Washington Conference.[151] The Netherlands, a small country that had to rely on a small torpedo fleet due to budget constraints and a shallow industrial base, argued that the submarine was of vital importance to the Dutch in guarding its strict neutrality and its colonial possessions in the East.

Although the Netherlands did not participate in the talks related to the Four Power Treaty, all countries signed an annex to this treaty, recognizing the Dutch possessions in South East Indies. Annex W to the treaty stated:"The Netherlands not being a signatory to the said treaty and the Netherlands possessions in the region of the Pacific Ocean therefore not being included in the agreement referred to, the Japanese Government anxious to forestall any conclusion contrary to the spirit of the treaty, desires to declare that it is firmly resolved to respect the rights of the Netherlands in relation to their insular

[149]Anten, 229.

[150]Ibid., 230.

[151]Ibid.

possessions in the region of the Pacific Ocean."[152] The other three powers signed similar documents.

The Dutch perceived the results of the Washington conference as a political success. It would reduce the likelihood of a crisis in the Far East and major powers had recognized Dutch sovereignty in the region.[153] The halt that was caused to the armament race tempered the pace at which the Dutch fleet became obsolete. The economic crisis, the no-more-war mentality, the implementation of the agreements within the League of Nations and the results of the Washington Conference reduced the support for an increase of defense spending in the Netherlands. Although the peace in Europe and the Washington Treaties created a perception of enduring peace, the situation in East Asia still presented reasons for concern for the Dutch government.

Due to the Washington conference, the British-Japanese alliance had effectively ceased to exist.[154] Immediately after the conference Japanese troops were still in Vladivostok. This went straight against one of the agreements of the conference. When at the end of October Japanese left Vladivostok, as a result of international pressure, Russian troops immediately occupied this area.[155] In 1922 an economic conference was

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[152]Kamerstukken II 1922, Verslag van de vaststelling van de Staatsbegroting, 6 April 1922, 2357.

[153]Kamerstukken II 1922, Handelingen Tweede Kamer, Verslag van de vaststelling van de Staatsbegroting, 6 April 1922, 2357.

[154]G. E. Rotgans, LTJG, "Eenige beschouwingen over de vraagstukken van het Verre Oosten," *Marineblad* (1925): 25.

[155]Ibid.

held in Honolulu, attended by the major powers from the Pacific.[156] Meanwhile the economic situation deteriorated in Japan. The armament programs had put so much pressure on the Japanese economy that protests were being held by the poor and students. Although they were constrained by the Washington treaties, the Japanese continued to expand their fleet. They were building ships that were not prohibited by the Washington Naval Treaty. This created resentment in other countries. The British started building a strong naval base in Singapore in 1923.[157] This, in turn, created a discourse within the Netherlands that the British might be the much needed ally for the defense of the Netherlands East Indies. In September 1923 a massive earthquake took place in Japan. The damage and the suffering the Japanese endured created a lot of sympathy throughout the world for the Japanese. These events eased tension in the region. The Japanese relationship with China improved and made place for new tensions. This time a renewed dispute about immigration law created tensions between the United States and Japan. United States fleet movements in the Pacific added to this tension.[158] Meanwhile another civil war broke out in China. As a result, Russia reinforced its military presence in the Pacific, awaiting the outcome of the Chinese revolutions. It was within this atmosphere that the 1922 fleet bill had to pass legislature.

Due to elections and a subsequent change of the government, the treatment of the bill was postponed to 1923.[159] The period leading up to the treatment reflects the level of

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[156]Ibid., 25.

[157]Ibid.

[158]Ibid., 26.

[159]Anten, 239.

controversy within Dutch government. Analysis of the minutes of congressional meetings of the time uncovers a range of political discourses, ranging from reinforcing and modernizing the fleet to a total abolition of the Royal Netherlands Navy, including the Netherlands East Indies Navy. It is difficult to draw a line of proponents and opponents of the fleet bill between the constellations of political parties. The opponents of the fleet bill argued that the fund that had to be established to finance the fleet bill would hurt the weakest part of the population: the unemployed and the poor. Furthermore, it would hurt the population in general by the indirect taxes. What made the bill so hated by the largest part of the Dutch population was that the projected defense spending did not meet the expectations of the population after World War I: after a period of (financial) sacrifices during the full mobilization, defense spending would be decreased in favor of expenses to address unemployment and other root causes of the economic crisis.[160] The Netherlands, being a small country, could not compete with the developments in other countries, even with the Washington treaties in effect. Additionally, opponents of the fleet bill advocated that the bill was going strictly against the intent of the treaties of Washington, on the side referring to one of the root causes of World War I, the naval arms race between the major powers.[161] The opponents of this discourse also referred to the guarantees that the four

[160]Kamerstukken II, Handelingen Tweede Kamer, Interpellatie Troelstra, 12 Oktober 1923, 52.

[161]Kamerstukken II, Handelingen Tweede Kamer, Staatsbegrooting voor het Dienstjaar 1924, 49.

powers had given by signing annexes to one of the treaties and thereby respecting Dutch sovereignty in the Netherlands East Indies.[162]

Next to ideological scruples against the bill, politicians also expressed concerns about the implementation of the bill. This bill, built upon a fleet strength that would only be achieved after twelve years, was designed to secure the budgets for the first six years, hence, the name of this fleet: the "half minimum fleet."[163] Would approval of the bill automatically imply that the government expressed a commitment to the other half after six years? Most politicians did not want to commit budgets for the next twelve years, based on the uncertain economic situation. A more fatalistic discourse, followed by Bill opponents, was displayed by the line of reasoning that however an increase of defense spending would lead to a stronger and modern fleet, the vastness of the colonial empire would make it impossible to build an effective defense.[164] Passing the fleet bill would be a waste of money that could be better spent on addressing the root causes of the relatively perceived deprivation amongst the Dutch population.

Opponents of the fleet bill argued that the projected fleet would show a progressive line, whereas doing nothing would cause a horizontal line in the capabilities growth. A reaction by the Minister of Foreign Affairs against accusations that the bill went against the intent of the League of Nations posited that the bill was in line with the

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[162]Kamerstukken II, Handelingen Tweede Kamer, Ingekomen Stukk, 6 April 1922, 2343, 159.

[163]Kamerstukken II, Handelingen Tweede Kamer, Interpellatie Troelstra, 12 Oktober 1923, 57.

[164]Kamerstukken II, Behandeling van den Staatsbegrooting voor het Dienstjaar 1924, Hoofdstuk VI, 50.

intent of the League--with strong armed forces, nations could defend their neutrality.[165] Furthermore, the government was convinced that allies would come to the help in the event of a threat against the East Indies.[166] They proposed that a conflict without the help of allies was unlikely. The last war had taught that a war of a certain state against the Netherlands as an isolated action would be inconceivable.[167] The interests of various major powers in the Pacific were textured to Dutch interests. This would automatically lead to the support of allies, should an invasion against the Indies archipelago occur. The Dutch archipelago provided a bridging function between British Asia and Australia. The British would never allow Japan to interdict the line of communication between British Asia and Australia.[168] Recognizing the expressed sentiments during meetings of the Dutch Parliament, the Dutch government took the position that the defense of the Netherlands East Indies would be the primary responsibility of the Dutch.

Due to its neutrality policy the Dutch could not build alliances and therefore the Netherlands East Indies had to rely on its own fleet. Political aloofness would be the only feasible course to guarantee independence and safety for its population. The fleet had to be modernized along the lines as proposed by the Gooszen Committee in 1921. Although the numbers as mentioned in the proposal were undoubtedly ambitious, the government

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[165]Kamerstukken II, Vaststelling Hoofdstuk VI (Departement van Marine) der Staatsbegroting voor 1922-1930, Vlootwet 1922, 2358.

[166]Ibid., 2346.

[167]P. Post Uiterweer, “Weet Nederland dat bij een voortzetting van de marinepolitiek Nederland en de Kolonien zijn overgeleverd aan de willekeur van hunne naburen en welke maatregelen moeten worden genomen?,” Marineblad (1921-1922): 9.

[168]Ibid., 16.

decided to submit the bill for the legislative assembly. On 26 October 1923, the Second Chamber of the State's General, voted against the bill with a margin of one vote.[169] This inhibited the development of a long term ship building plan. The government had to secure budgets for modernization and building programs per fiscal year again.

Building a Smaller Fleet

Within this resource constrained environment the Netherlands East Indies Navy had to develop a concept of operations for a fleet that was centered on the submarine. The Dutch managed to build an effective concept-based on strategy, specifically using the lessons identified on the use of submarines during World War I and its close relationship with German naval engineers.

The Dutch imported know how on the building and employment of submarines from Germany. The German *Krupp Germania Werft* from Kiel, Germany was one of the biggest competitors for the bid on Dutch battleships in 1914.[170] Although the building of these ships was cancelled due to the start of hostilities, the Dutch battle cruisers of the *Java*-class, the *Java* and the *Sumatra*, were built after German design in 1915. These ships were built at Dutch shipbuilding yards, with technological support from Germany. The German *Germania Werft* was one of the leading submarine shipbuilding yards and Dutch ship building was depending on this shipbuilding yard. After the Versailles Treaty this dependence became mutual. The restrictions imposed on the Germans inhibited them from building weapons. In order to preserve know how and ensure technological

[169]Jungslager, 135.

[170]Anten, 263.

developments for its own army and navy, the Germans constructed the *Fokker* airplane in the Netherlands. Furthermore, the German company *Siemens and Halske* created the *Hazemeyers Fabriek van Signaal-apparaten.*[171] The latter played a significant role in the development in straightening equipment for the *Java* and the *Sumatra*. In July 1922, the *Germania Werft*, in cooperation with two other German shipbuilding yards, set up a joint stock company in The Hague in the Netherlands, N.V. Ingenieurskantoor voor Scheepsbouw (I.v.S).[172] Acting as a submarine design and consulting bureau, I.v.S. officially opened for business in October 1925.[173] In time this bureau built eight U-boats with German machinery for the Kawasaki Shipbuilding yard at Kobe, Japan, as well as submarines for Finland, Spain, Sweden, and Turkey.[174] A similar joint venture with the Swedes after 1927 produced electric torpedoes that would became the standard German torpedo during World War II.[175] I.v.S sold the designs for four U-boats to Finland in 1924. The Turks placed orders for two Turkish U-boats at the I.v.S yards in Rotterdam, the Netherlands. I.v.S also played a major role in the building of Spanish U-boats. Major parts were assembled in Rotterdam and final assembly took place in Spain with the support from German engineers.[176] These developments transferred knowledge and

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[171]Anten, 264.

[172]Ibid., 265.

[173]Ibid.

[174]Holger H. Herwig, "The Submarine Problem," in *Military Innovation in the Interwar Period*, eds. Williamson Murray and Allan R. Millett (New York: Cambridge University Press, 1998), 232.

[175]Ibid.

[176]Ibid.

engineering skills from Germany to the Netherlands. The Dutch used this technological know-how for the construction of its own submarines. One example of the transfer of knowledge is the fact that one of the Dutch submarine shipbuilding yard, Wilton-Feijenoord, near Rotterdam, employed four German engineers. One of these German engineers served as the lead designer in that department of this shipbuilding yard.[177]

Based on Murray's factor of specificity, the Dutch could envision geography, task and the enemy they potentially had to fight; they could tailor the design of the submarine to the specific tasks and could apply the latest technology and engineering skills. This ensured submarines that met the highest standards. Next to the know-how and lessons learned transferred by the Germans, Dutch naval officers studied submarine warfare during World War I. They studied the failure of the German unrestricted submarine warfare in depth.

Dutch naval officers identified five major factors that caused the failure of the German unrestricted submarine warfare.[178] These factors included: the strategically hesitant execution of the unrestricted submarine warfare, the lack of support from surface vessels, the geographical conditions, the evolution of anti-submarine warfare systems, and the convoy system. The start of World War I presented a remarkable challenge vis-a-vis command of the sea. On none of the world seas could the Germans dispute allied command of the sea. Since the outbreak of the war the allies managed to blockade the German fleet-in-being in the Heligoland Bight and the southern part of the North Sea.

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[177]Anten, 265,

[178]J. van Reede, "Heeft de onbeperkte duikbootoorlog gefaald?," *Marineblad* (1921-1922): 177-182.

The Germans never attempted to change this situation.[179] The Entente enjoyed the uninterrupted benefits of command of the sea and possessed total control of the sea lines of communications for military and economic purposes.[180] But the technological evolution of the submarine would totally change this situation during the first year of the war. The Germans increased speed, endurance and thereby the reach of their submarines and made these submarines more effective and suitable of influencing allied sea lines of communications. The purpose of the German submarines became to deny the benefits of command of the sea to the allied forces. This could be accomplished by the interdiction of the enemy sea lines of communications. The Germans introduced unrestricted submarine warfare into the war.[181] This did not mean the pointless destruction of enemy and neutral property but a calculated strike against the enemy sea lines of communications that could benefit the German war effort.[182] The task for German submarines was clear: to cause as much damage as possible to the enemy and neutral shipping.[183] This would threaten the shipping of troops, equipment and supplies to the European continent. Next, this would cause a decrease of the allied supply of raw materials. Additionally, this would generate a lack of primary necessities of life for the British population, and last, unrestricted submarine warfare would cause major financial

[179]J. van Reede LCDR, "Heeft de onbeperkte duikboten oorlog gefaald?," *Marineblad* (1921-1922): 164.

[180]Ibid.

[181]Ibid., 166.

[182]Ibid.

[183]Ibid.

losses to the allies.[184] In other words, the goal was twofold--the collapse of the Allied war economies and pressure on the Allied governments via starvation of its population.

Although German unrestricted submarine warfare was very successful initially, unrestricted warfare had failed since the German could neither prevent the allies from shipping vital personnel and equipment to the European continent, nor could they prevent the allies from shipping massive quantities of supplies to Britain, nor could they influence the resiliency of the British population. From the statistics that the British Admiral John Jellico supplied to the Dutch government, Dutch naval officers learned that the total tonnage of allied and neutral ships that had been sunk by the Germans decreased from 1,619,000 tons in the first quarter of 1917 to 178,000 to the last quarter of 1918.[185] These statistics show a remarkable decline of the German submarine success and shows the effectiveness of the allied attempts to counter the submarine threat. The first reason for this decline was the hesitant execution of the unrestricted submarine warfare. The German Kaiser, fully aware of a potential American intervention, gave ambiguous orders to his Chief of the Navy, Admiral von Tirpitz. Submarine Commanders were constraint by rules of engagement that inhibited the effectiveness of the submarine, such as surfacing before an attack and positive identification of the target vessel. Furthermore, the Germans were threatening with unrestricted submarine warfare during the first years of the war. Not before 7 January 1916, the German Admiralty submitted a paper to the

[184]Ibid.

[185]Ibid., 169.

German Kaiser, stating that if the Kaiser would lift the restrictions upon the German submarine Commanders, British resistance would be broken within six months.[186]

Lifting of the restrictions came only late during the war, buying the allies time to develop countermeasures against the German submarines. These countermeasures were: the arming of merchant vessels, using smoke machines on board of these vessels, the introduction of the depth charge, the use of planes for identification of submarines, and the use of torpedo nets and hydrophones.[187] The Allied forces increased the building of destroyers, enabling the introduction of the convoy system.[188] With the introduction of the convoy system, the initiative transferred from the Germans to the Allied forces. The convoy system made route changes possible and this deprived the Germans of the ability to choose the time and place of an attack. Furthermore, the geographical conditions enhanced the effectiveness of the convoy system. Instead of many independently travelling ships, that offered the Germans lots of opportunity for targets, the convoy system brought emptiness to the battle space: the Germans were often not able to find targets on the vast open Atlantic Ocean. They were also not able to concentrate submarines after a convoy had been identified. It was especially this lesson that the Dutch expanded upon while developing their *roedel* (wolf pack) techniques in the early 30s.[189] Based on espionage, signals intelligence and (not known to the Dutch at the time) code breaking, the Allies where able to locate German submarines and could order the convoys

[186]Ibid., 169-171.

[187]Ibid., 171.

[188]Ibid., 172.

[189]Anten, 267-270.

to change routes.[190] The last reason for the failure of German unrestricted submarine warfare the Dutch identified was the absence of surface vessels, like fast cruisers, that could provide direct support to the submarines.[191] The submarines by themselves could not oppose the Allied anti-submarine efforts with means other than stealth and evasion. Surface elements could have supported the submarines by disrupting the convoy ships and reducing anti-submarine warfare activities. As mentioned before, the Dutch were fully aware of the blockade that the British imposed on the German fleet, which reduced feasible surface support. The main conclusion the Dutch drew about the ineffectiveness of the German submarines was that the convoy system had been decisive, and less so not the technological countermeasures the Allied forces had developed.[192]

Dutch naval officers also studied the German submarine tactics during World War I. They identified that the German were in the process of developing a tactical answer to the convoy system.[193] The tactical answer to the convoy system, in essence a concentration of defense, was a concentration of attack.[194] In April 1917, the Germans tested a new tactic. The tactic was based on a long spread line of German submarines that could rapidly concentrate on command of a Commander, break through the convoy escort screen and penetrate the convoy. This tactic would turn the strength of a convoy,

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[190]Van Reede, 177.

[191]Ibid., 174.

[192]J. TH. Furstner, LCDR, "Het nut en de toekomst van onderzeeboten voor onze Oost-Indische Kolonien," *Marineblad* (1921-1922): 380-382.

[193]Anten, 268.

[194]Ibid., 274.

concentration, into a weakness: a target rich environment. Vital to this tactic was a large submarine with strong radio equipment that could direct other submarines. The German submarine command faced two problems. First, the German naval staff did not support this innovative concept and were not willing to resource this concept.[195] Second, the use of radio contact during the crucial phase of the attack was vital to this tactic. Submerged submarines could not receive radio messages. Although the Germans experimented with different wavelengths and manual telescope antennas, they never solved the technical problem that inhibited an effective use of the new tactic.[196]

Educational and Organizational Solutions

The Dutch naval staff established a Naval War College in 1921.[197] The aim of this college was to generate unity of thought within the navy and to develop strategic concepts based on the three dimensional environment the Dutch were facing: the Japanese threat, the resource constraint environment, and the lack of a coherent concept for the defense of the Netherlands East Indies. One of the first assignments the selected naval officers received was to translate the recommendations of the 1922 committee into a concept of operations based on a submarine-centric fleet.[198] The main intent for the defense of the archipelago is stated in an excerpt of the report of the 1922 committee that stated: “In the Netherlands East Indies, a large archipelago, a cohesive coastal defense,

[195]Ibid., 274

[196]Ibid., 275.

[197]Jungslager, 15.

[198]Anten, 277.

like for the Netherlands on the continent, is not feasible. The task of the Netherlands East Indies Navy should be to, next to reconnaissance, delay enemy penetration into the archipelago as long as possible, prevent the enemy to achieve command of the sea with a minor fleet in the Indies seas, attrite the enemy transport fleet to the best of the abilities and threaten his sea lines of communications. To this end the fleet needs, next to a submarines striking force: mine layers, destroyers, some fast, light cruisers and airplanes. Surface vessels play a pivotal role in supporting this operational submarine concept."[199] Dutch naval officers realized that a specialization of the submarines for its tactical tasks was an undeniable demand for the future. This would ensure an efficient use of the limited assets. The time that the Royal Netherlands Navy built ships just because these types of ships were employed by other countries had ended. Thus far, the Dutch were building ships neglecting that every naval ship is a compromise between tactical and strategic demands which can vary per nation, region and above all the nature of the war. They realized that they were at the point of employing a weapon that played a supporting role in other navies, in a leading role for the defense of the Netherlands East Indies. This could be done by choosing their own course regarding the architecture of their ships and the tactics they would employ. They contended that innovation had less to do with money than with intellect and personal dedication. From that perspective, a lot could be achieved if there was room for new ideas and if leaders would forego the discourse to duplicate ship types after foreign example.[200]

[199]Furstner, 371-416.

[200]Ibid., 413.

In 1922 one of the first naval officers that had been selected for the Naval War College was Lieutenant Commander J. T. Furstner. This naval officer, later influenced by the French naval officer Raoul Castex at the French *Ecole de Guerre Navalle* in 1927-28 and who became Chief of the Naval Staff in the late 1930s, wrote a concept of operations for the submarine centric fleet. His publication in the naval magazine "*Marineblad"* describes the foundations of this concept.[201] The concept describes that the purpose of the military operations in the East Indies archipelago is to defend Java by attacking an invasion force. The best moment to attack the enemy is when the invasion is at its weakest: with the troops still embarked.[202] Attacking the embarked invasion fleet will attrite the enemy invasion army and thereby buy valuable time for allies to come help. Based on an analysis of unrestricted submarine warfare, Furstner estimated that an enemy fleet would travel in a convoy, protected by cruisers.[203] As mentioned before, the Dutch reached the conclusion that the convoy system that enabled the allies to avoid attacks by avoiding submarine, rather than technological countermeasures were the primary mechanism defeating the German submarine threat. Based on the threat analysis, the main direction of approach of the enemy would be from the north.[204] The entrance to the Java Sea, the most likely enemy avenue of approach to the island of Java, is limited to three narrow straits: The Strait of Macassar, Karimata Strait and the Floresz Sea, through

[201]Ibid., 371.

[202]Ibid., 375.

[203]Ibid., 382.

[204]Ibid.

the Moluccas.[205] These narrow straits prevented an enemy convoy from avoiding the Netherlands East Indies fleet.[206]

Based on the German concept that the best remedy to defensive concentration is offensive concentration, the Dutch identified three areas where divisions of submarines could concentrate and effectively engage the enemy transport fleet in designated or likely areas. Early reconnaissance was vital to this concept. It was calculated that it would take an enemy transport fleet three periods of daylight to reach the island of Java after passage of the Strait of Macassar, a distance of 900 miles, two periods of daylight from the passage of the Karamita Strait, a distance of 600 miles and four periods of daylight from the passage of the Floresz Sea.[207] This was considered enough time to concentrate the striking force, close in with the enemy and engage the transport fleet. It was identified that most likely the enemy would travel with a convoy well-protected protected by cruisers and destroyers that would conduct patrols and try to neutralize the Dutch submarine threat. If the reconnaissance succeeded in identifying the enemy transport fleet early on, the Dutch calculated they could attrite the enemy fleet to 50% and thereby reducing the enemy ability to project an effective landing force onto Java.[208]

The Dutch calculated they needed three strike forces, called divisions. These divisions would be made up of submarines as the major strike element and cruisers and destroyers to counter the anti-submarine threat, a lesson they had learned from analyzing

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[205]Ibid., 390-392.

[206]Ibid., 393.

[207]Ibid., 392.

[208]Ibid., 393.

German submarine warfare during World War I. As a rule these divisions consisted of 4 submarines and a varying number of destroyers and cruisers.[209] There was a lot of discussion amongst naval officers about the distances at which the submarines would attack the enemy transport fleet. Based on new torpedo technology they calculated that the submarines could be effective at 4,000 meters.[210] As mentioned before, the Dutch believed that German failure during World War I was due to the hesitant employment of submarines. They calculated that the actions of their submarines had to be an all or nothing effort. The battle would be decisive.[211] The Dutch accepted the risk of losing their submarines by closing with the enemyin order to achieve the kind of close ranges to sink the transports. Accordingly, the Dutch also developed techniques to penetrate a convoy and even adapted their submarines to attack ships at a close range once penetration of a convoy had succeeded. They fitted swiveling torpedo tubes to the hull of the submarines that enabled them to shoot at targets at close range and at different angles.[212] As mentioned before, strategic reconnaissance would be vital to the effectiveness of the striking force. It took time to concentrate the submarines and to reach suitable launching positions. Recognizing the importance of reconnaissance, the naval officers of the Netherlands East Indies fleet developed this capability by developing a naval air service.

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[209]Antens, 284.

[210]Furstner, 394.

[211]Anten, 291.

[212]Ibid., 286.

The naval air service (Marineluchtvaartdienst or MLD) was established on 18 August 1917.[213] Initially, the MLD consisted of 14 pilots and 17 airplanes. The first naval pilots received their basic training with the Army Air Force (Luchtvaartafdeling or LVA) at Soesterberg airbase. The benefits of a naval air service became clear during the first exercises that were conducted with the fleet. In 1917, the Department of the Navy sent a delegation to Sweden for the acquisition of engines. This resulted in the delivery of the Swedish *Thulin* type engines and several airplanes.[214] Similar to their investigations on the employment of submarines, the Dutch studied the lessons of the use of airplanes in combat that had been learned by other countries. The MLD sent two officers to the United States to prepare the acquisition of six Glenn Martin float planes (seaplanes).[215] Furthermore, the MLD benefitted from the use of interned planes that fell into Dutch hands. These planes were sometimes undamaged; sometimes they were damaged by their pilots or had sustained combat damage prior to falling in Dutch hands. Sometimes even wrecks had to be salvaged from the bottom of the North Sea and completely rebuilt.[216] The latter contributed to a better understanding of modern technology. Later during World War I, the Dutch took a late delivery of German seaplanes.[217]

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[213]Tom Womack, *The Dutch Naval Air Force Against Japan: the Defense of the Netherlands East Indies, 1941-1942* (Jefferson, NC: McFarland & Company, 2006), 3.

[214]Koninklijke Nederlandse Vereniging voor de Luchtvaart, "Verslag betreffende den Marineluchtvaartdienst," *Marineblad* (1921-1922): 73.

[215]Ibid., 79.

[216]Ibid.

[217]Ibid., 80.

The armed forces put much effort in the development of their own aviation industry. Contrasted with other countries, where commercial aviation followed military aviation, it was the Dutch commercial airliner, Koninklijke Luchtvaart Maatschappij (KLM) that acted as a pioneer for the development of aviation in the Netherlands.[218] Having an interest in commercial growth, the KLM understood the purpose of technological research and that it had to modernize its fleet constantly. The KLM reached a global stature when it started intercontinental flights to the Netherlands East Indies. The MLD, recognizing the increasing experience the KLM gained with long distance flights and with plane materials and engines, established a working relationship with this well-led commercial enterprise. The KLM shared lessons and information with the MLD and the latter started buying the same engines, flying instruments and propellers as KLM.[219] Furthermore, MLD pilots were given the opportunity to gain experience with modern airplanes under various weather conditions as co-pilot with KLM flights. In 1918, the Dutch government established a bureau of aviation that had to contribute to the development of Dutch military aviation.[220] The MLD benefitted from this bureau that had its own wind tunnel, research department and test facilities.[221]

Supported by these developments, the Dutch aviation industry evolved and the MLD bought a series of *Farman* airplanes fitted with Swedish *Thulin* engines.

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[218]J. A. Bach, "De Nederlandse Luchtvaart Kritisch Beschouwd," *Militaire Spectator* (1940): 417.

[219]Ibid., 418.

[220]Koninklijke Nederlandse Vereniging voor de Luchtvaart, "Verslag betreffende den Marineluchtvaartdienst," *Marineblad* (1921-1922): 81.

[221]Ibid.

Additionally, the MLD took the delivery of a series of seaplanes fitted with German *Mercedes* engines.[222] During World War I, the Dutch did research after building their own engines but seized these activities after hostilities had ended, when cheaper and better engines became available from imports.[223] The Dutch aviation company *Fokker* built fighters for the MLD that met the highest standards. Fokker also delivered flight trainers to the MLD that enabled smoother transition from conventional airplanes to seaplanes for MLD pilots. The MLD used its planes predominantly in a reconnaissance role. The Dutch did introduce torpedo bombers into their armament. The most numerous among the large MLD seaplanes were 10 twin-engine T.IVA floatplanes. Featuring all metal construction and two large floats under the fuselage, the T.IVA had been designed as a torpedo/horizontal bomber and reconnaissance plane in 1927. The T.IVA was also the first long range seaplane acquired by the MLD, allowing it to effectively patrol the broad expanses of the East Indies archipelago on a regular basis for the first time.[224] Although the potential for bomber airplanes was recognized, Dutch naval officers were skeptical about the effectiveness of the bombing of ships initially.[225]

The tests that the United States had conducted with the bombing of the German warship *Ostfriesland* on 21 July 1921 in Norfolk, Virginia, were noticed by the Dutch.[226]

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[222]Ibid., 79.

[223]Ibid., 80.

[224]Womack, 6.

[225]Unknown author, "Bombing aircraft sink German destroyer in twenty minutes," *Marineblad* (1921-1922): 498-501.

[226]Koninklijke Nederlandse Vereniging voor de Luchtvaart, "Verslag betreffende den Marineluchtvaartdienst," *Marineblad* (1921-1922): 73.

The test put an end to the discussion whether a modern battleship could be sunk by aircraft bombing attack. The question appeared to be solved when United States Army Glenn Martin bombers attacked the ex-German dreadnought *Ostfriesland* in a stationary position and a clear day with 2,000 pound bombs after they had bombed her earlier in the day. In a spectacular display of air power the battleship sank in twenty-five minutes. Although the general consensus was that the test was conducted under ideal, probably even unrealistic circumstances, like the absence of anti-aircraft artillery and good weather conditions, they took notice of the fact that a well dropped 2000 lbs. bomb could sink a 23,000 lb. battleship.[227] The MLD never introduced single role bombers into its armament. As mentioned before they did introduce torpedo bombers into the MLD, but this never materialized into a concept of operations (as it did for the Japanese 2-engined Mitsubishi torpedo bombers) that built upon the unique characteristics of bombers. One of the reasons is that, analogous to the torpedo-artillery discussion, Dutch naval officers saw the bomber, misreading a supposed redundancy in capacity between the battleship and the bomber, as a threat to the still highly desired battleship.[228] The KNIL would exploit this line of reasoning, by introducing bombers in its armament in another

[227]Junglsager, 141-142; See also John T. Kuehn, Chapter VII, "The *Ostfriesland*, The Washington Naval Treaty, and the General Board of the Navy: A Relook at a Historic Sinking," in *New Interpretations in Naval History: Selected Papers from the Sixteenth Naval History Symposium* edited by Craig C. Felker and Marcus O. Jones (Newport, RI: Naval War College Press, 2012): 73-86. Kuehn argues that *Ostfriesland* was already sinking and in very poor material condition when General Mitchell violated the rules and sank the ship without permission. However, Kuehn also argues that the US Navy took the test very seriously and acted accordingly to try and strengthen the defensive strength of its battleships.

[228]P. Post Uiterweer, "Samenwerking van Schepen aan de Oppervlakte, Onderzeebooten, Luchtstrijdkrachten en Steunpunten in den Zeeoorlog," *Marineblad* (1922): 449-486.

illustration of the sensitivity between the Netherlands East Indies Navy and the KNIL over financial resources and organizational power in the 1930s.

By 1928, the Netherlands East Indies navy had developed effective tactics that were innovative and built on the lessons from World War I. These tactics were called the "ambush-division tactic" in the Netherlands. In essence it was a division level (i.e. 4 submarines) attack from a static position. A more dynamic concept tested used submarines not constrained to static lines before concentration. The main obstacle that inhibited this next step in the evolution of a mature and effective submarine warfare concept was a lack of ability to effectively communicate while under water. Two technological innovations enabled the Dutch to take this next step: the construction of a periscope antenna and the concept of the *snorkel.*

Conclusion

In summary, the Washington Conference was aimed at limiting the arms race, for security and financial reasons. The conference resulted in several treaties, the most important treaty of which was the Treaty on the Limitation of Naval Arms, signed between the United States, Great Britain, Japan, France, and Italy (The Washington Naval Treaty).[229] Despite protests within Japan (especially in the Imperial Japanese Navy), the Japanese attended the conference. Not participating in the conference would belie its ambitions in the Pacific. The Netherlands participated in the Washington Conference. They signed a treaty between the nine powers of the Pacific region aimed at

[229]This usage comes from John T. Kuehn, *Agents of Innovation* (Annapolis, MD: Naval Institute Press, 2008), appendix I and passim. This treaty is also sometimes referred to in the literature as The Five Power Pact.

stabilizing the situation in China. Furthermore, they signed a treaty on the limitation on the use of submarines and noxious gases. The Washington conference was perceived as a success in the Netherlands. The results of this conference, combined with the establishment of the League of Nations, reduced support for strong defense spending in the Netherlands. The poor economic situation in the Netherlands around 1922 aroused resentment against the increase of defense spending, to the detriment of the poor and the unemployed. The Dutch population was war-weary and expected a decrease in defense spending. They wanted a peace dividend since World War I had been nearly has hard on them as the belligerents. This threatened military budgets as a means to address the root causes of the economic crisis.

Within this environment the fleet bill came before the legislature in 1923. The Dutch Parliament voted against the bill by a narrow margin. Although the electorate did not authorize the government to develop long term defense planning and budgeting, the Department of the Navy realized that the obsolete Dutch fleet had to be modernized. The Dutch government, however, recognizing the effects of the League of Nations and the Washington Conference, had concerns over developments with Japan. A strong defense for the Netherlands Indies was vital to protect its interests. The Dutch wanted a strong defense but counted on the support from allies. Within this atmosphere, the Netherlands East Indies fleet had to develop a concept of operations for the defense of the Netherlands East Indies. Dutch naval officers, recognizing the central role of the submarine in their fleet, analyzed the lessons on submarine warfare from the Germans. They assessed that the failure of the unrestricted submarine warfare proximately caused the convoy system and not by the technological advances employed by the Allied navies. Furthermore, the

Germans exported submarine technological know-how to the Netherlands by raising engineer bureaus that developed submarines designs and exported submarines to countries like Turkey and Spain.

The Dutch expanded upon this knowledge. Based on the lessons and the imported know how the Dutch developed an innovative submarine concept of operations for the defense of their colonies in the East Indies. They advocated that the geographical circumstances, namely the narrow straits leading to the Java Sea in the East Indies archipelago inhibited an enemy's invasion fleet from avoiding the divisions of Dutch submarines, luring for prey into engagement areas. The Dutch submarines, depending on support from cruisers and destroyers against the enemy's surface fleet, were only effective if vital reconnaissance could give them time to concentrate and reach launching positions. The Dutch further developed the naval air service or MLD into an effective reconnaissance asset. The Dutch naval officers neglected the bombing role for the air service. Although the Dutch developed the submarine concept of operations into an effective capability, technological obstacles inhibited development into full maturity. The Dutch were not able to effectively communicate while submerged and had to operate with static lines to enable rapid concentration of forces. The invention of the snorkel and the periscope antenna would change this. The *roedel* tactic was born.

The next chapter will describe how the Netherlands East Indies fleet integrated this new technology into a highly innovative *roedel* operational concept. Furthermore, the next chapter will describe how navalist discourses influenced the promising innovative approach the Dutch had taken outlined in this chapter. Additionally, the next chapter will describe how inter- and intra-service rivalry reached its height and its impact on

innovation. Finally, it will describe how the emerging threat in Europe and Asia made the Dutch change their strategic course. The Dutch armed forces stepped up its rearmament program and had to improvise to build an effective defense within limited time. This would prove to be too late.

CHAPTER 5

1930-1942: THE RISE, DECLINE, AND FALL OF AN INNOVATIVE CONCEPT

> Even when a military service does a lot of things right most of the time, just a temporary failure in finance or policy or thought for the space of a few years can create major difficulties for innovation.
>
> — Barry Watts and Williamson Murray, *Military Innovation in the Interwar Period*

Innovative breakthrough: The periscope-antenna

The period from 1930 to 1942 can be best characterized by five circumstances. The first is technological and includes the invention of the periscope antenna, the snorkel, and enhanced acoustic systems that enabled the Netherlands East Indies Navy to further develop the *roedel* tactics into a mature and effective concept of operations. Second, during the early years of the 1930s, the biggest global economic crisis of the twentieth century emerged resulting marginal budgets due to financial constraints that inflamed the latent interservice rivalry, with the bomber airplane as the main point of controversy. Third, the resurrection of a navalist discourse within the naval war college undermined the submarine division's operational plans and engendered friction between naval officers in the Netherlands East Indies and the Naval Staff in The Hague. Fourth, the growing tensions in Europe and the Pacific, caused by the rise to power of Adolf Hitler and Japanese expansion, created a sense of urgency within the Dutch government to start rearmament and for rapprochement of allies. Finally, Dutch neutrality policy proved to be an obstacle to obtain potential allies like the United States and England. The lenient position of the Dutch government-in-exile towards the British and the subsequent promises in relation to the defense of Singapore combined with a navalist discourse

within the Netherlands Navy caused the finishing stroke for a promising concept for the defense of the Netherlands East Indies after the start of World War II.

As described in chapter three and four, the defense of the Netherlands East Indies was centered on the use of submarines against an enemy transport fleet in the narrow straits that led to the Java Sea. Based on lessons from World War I and imported technology and know-how from Germany the Netherlands East Indies Navy was able to develop a promising concept for the employment of its submarine centric fleet.

But technological obstacles inhibited development of this concept into full maturity. The Dutch were not able to effectively communicate while submerged and had to operate with static lines to enable rapid concentration of forces.[230] To this point, submarine tactics were limited to positioning static formations that could concentrate upon central command. This concept was highly dependent on reconnaissance and surface vessels providing the necessary protection against enemy anti-submarine warfare assets. But officers from the Netherlands East Indies Navy also identified vulnerabilities in this concept. Above all, the concept, based on the geographical advantages of the East Indies archipelago, could be very predictable for the enemy. The enemy had a vote and it would not be very difficult for the Imperial Japanese Navy to discern the likely locations from which the Dutch submarine divisions would try to sink the transport fleet.

Based on this analysis and the awareness that the oil fields at Tarakan and Balikpapan were of vital importance to the Japanese and had, next to Java, to be defended; the Dutch decided to adapt the concept of operations. Rapid concentration

[230]Anten, 305; J. Bosma, "Hoofdtrekken van Moderne Onderzeeboottactiek," *Marineblad* (1935): 532.

based on early reconnaissance formed still the basic underpinnings of the concept but the submarine divisions had to be capable of concentrating throughout the archipelago and attack at locations where the enemy least expected it. One of the developments that acted as a catalyst for this change was the development of the bomber airplane. Dutch military authorities noted that the airplane evolved at a rapid pace and it also became clear that the Japanese had developed effective fighters and bombers. It was assessed that the nature of the Java Sea in the narrow straits would make it difficult for the Dutch submarines to avoid detection from Japanese reconnaissance planes.[231] Submarines could still be spotted at a depth of twenty-five meters.[232] The Dutch had to develop a concept that enabled them to concentrate effectively and enabled them to advance and attack undetected in loose but coherent formations and thereby preventing static formations at predictable locations. Effective radio communication while submerged was the key to this concept. An advanced technological innovation enabled this.[233]

The Royal Netherlands Navy was the first to conduct experiments with submerged radio traffic. Already in 1923, the new Dutch submarine K IX conducted exercises in the Irish Sea with cable antennas, mounted to the anti-mine cables.[234] Although these tests proved to be successful, a very limited range at the medium and short wave frequencies inhibited an effective use for maneuvers. Later, experiments were conducted with telescope antennas that had to be erected manually through a spinning

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[231]A. J. Bussemakers,"Torpedodragers," *Marineblad* (1939): 532-533.

[232]Anten, 328.

[233]Ibid., 305.

[234]Ibid., 307.

device.[235] This time consuming and labor intensive method proved ineffective. Furthermore, medium wave transmissions proved lengthy in nature. This made submarines vulnerable to evolving direction finding technology.

In 1929, after the short wave radio techniques were developed, Dutch naval officers conducted testing with periscope antennas. A Dutch officer managed to mount a short wave antenna in the navigation periscope of the new Dutch submarine K XIV.[236] The tests proved very successful, also with medium wave transmissions. This periscope antenna would soon be mounted in the existing submarines of the Royal Netherlands and Netherlands East Indies navies. Ultimately, it was possible to transmit radio messages while submerged. With this innovation, the Dutch submarine divisions were able to conduct stealthily, submerged approaches to engagement areas under central command. Within these engagement areas, the Dutch submarine Commanders could, although under central command, determine their own attack profile.[237] Like wolves in a wolf pack, submarine Commanders could attack individually, as part of a loose formation. As mentioned before, these attacks could be at close range, within the perimeter of a convoy, accepting the risk of sacrificing the boat. Attacks could also be at medium range, the preferred method by Dutch naval officers at the time.

As stated earlier, the Netherlands East Indies submarine Commanders identified several weaknesses in their concept of operations. The concept of employment was too rigid and was very predictable. The concept called for attacks in engagement areas that

[235]Ibid., 308.

[236]Ibid.

[237]Ibid.

could also easily be identified by the enemy. These would be the locations where the enemy would increase its anti-submarine warfare efforts and take all necessary measures to decrease a Dutch submarine threat. This could be done by the passage of the straits at night, sailing unpredictable course patterns, and reconnaissance. The presence of Dutch surface vessels gave away the presence of Dutch submarines.[238] Therefore a discourse by submarine commanders emerged to reduce the role of surface vessels in the concept of operations. To enhance the chances to a total surprise of the enemy transport fleet, the *roedel* concept of operations would have to be conducted solely with submarines and reconnaissance planes.[239] To achieve total surprise, and recognizing the Japanese airplane threat, the Dutch naval officers assessed that the submerged advance to contact had to be at least at a distance of 40 miles.[240] The introduction of the periscope antenna enabled this method. During the approach the division Commander could direct its *roedel*, based on the continuous stream of reconnaissance reports. But these long submerged approaches caused a round of new problems--how to make and maintain contact with the enemy while submerged and how to solve the problem of reduced battery endurance of the diesel-electric engines while submerged.[241]

Incessant submerged travelling reduced the battery capacity of the submarines diesel-electric engines to marginal levels.[242] To operate effectively, the submarine needed

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[238]Bosma, 532-535.

[239]Ibid.

[240]Furstner, 390.

[241]Anten, 339.

[242]Ibid., 340.

its batteries full potential during the attack phase. To recharge the batteries the engines needed fresh air, a requirement that forced the submarine to surface. Surfacing during the approach phase was violating the principles of the *roedel* tactics. The invention of the *snorkel* or *snuiver,* an air inlet that enabled the submarine to charge batteries when travelling submerged, would solve this practical problem. The *snuiver* was not a Dutch invention. It was the Italians that were the first to develop a serviceable air inlet. The Italians did not grasp the importance of this air inlet and envisaged no employment, lacking a tactical concept that needed this capability.[243] They removed the inlets from their submarines in 1937. The Dutch, aware of the Italian capability, developed its own *snuiver* and introduced it into its submarine fleet in 1934.[244] This development brought the *roedel* tactic closer to maturity. The *snuiver* was the technological answer to the projected Japanese air superiority above the narrow archipelago sea straits. The last problem that had to be solved was how to gain and maintain contact with the enemy while submerged. The emphasis on submerged attacks and approaches made orientation and navigation essential elements of the concept.

Next to the use of the periscope the Dutch solved the problem of how to gain and maintain contact with the enemy by an effective application of hydrophones. In 1915 the British navy first introduced hydrophones into its navy, capable of interceptions at two miles but incapable of direction finding.[245] The use of hydrophones evolved and Dutch submarines were equipped with modern German hydrophones in 1919. Based on its

[243]Ibid., 339.

[244]Ibid., 340.

[245]Ibid., 329.

traditional preference for German technique, an inheritance from the cooperation on the development of submarine technique in the interwar period, the Netherlands bought advanced hydrophone systems from the German firm Electroacoustic in 1930.[246] This cutting-edge equipment enabled the Dutch submarines to find and follow enemy vessels. The Dutch also introduced enhanced versions of hydrophone from the firm Atlas Werke. These active sonars, called periphons, of the C type, enabled Dutch submarines to identify enemy convoys at 10 miles.[247] This technique further enabled the Dutch to employ their preferred *roedel* tactics: a submerged approach of an enemy transport fleet over long distances, to a launching position, most preferable at 90 feet deep.[248]

Although the attacks were conducted individually by submarine Commanders and central command was placed second to the attack, the approach was under central command. The approach phase followed vital reconnaissance messages--called "cuing" in today's US Navy--from the flying boats, operating well ahead of the submarine divisions.[249] The Dutch identified two forms of reconnaissance for its flying boats: strategic and tactical reconnaissance.[250] The strategic reconnaissance was aimed at identifying the enemy transport fleet main approach towards the archipelago. The tactical

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[246]Ibid., 330.

[247]Ibid.

[248]Ibid.

[249]Conversation with retired Commander John T. Kuehn, USN, who served in the patrol and reconnaissance aviation community in the US Navy from 1983 through 2000, especially with airborne reconnaissance planes that specialized in this type of cuing (13 May 2013).

[250]Anten, 310.

reconnaissance was aimed at following this convoy after identification. For this tactical reconnaissance, the flying boats should maintain contact with the enemy convoys and relay reconnaissance messages to direct the submarines. It was identified that the slow flying boats in the tactical reconnaissance role were vulnerable to enemy airplanes that protected the convoys.[251] Oddly enough the Netherlands East Indies never introduced faster and better armed airplanes, like light bombers that had a better survivability against enemy planes and could conduct offensive operations to delay the fleet, into its concept. One of the reasons could be that the flying boats could provide the staying power (endurance) that was needed to patrol the vast archipelago.

For the reconnaissance task, the Netherlands East Indies Marine Luchtvaartdienst initially used the Dornier *Wal* flying boats. These flying boats lacked the short wave transmitters, necessary to effectively communicate with the submarines with its introduced periscope antennas.[252] Its successor, the Dornier 24 flying boat, was specially designed for the Netherlands East Indies.[253] The Dornier Do. 24K flying boat, commonly referred to as "X-boats" (because of their serial numbers, which were numbered X-1 through X-36), was a large, rugged seaplane specifically designed for long-range reconnaissance and air-sea rescue in the broad expanses of the East Indies.[254] The Dutch initially approached Dornier with the request for a new flying boat to replace their aging Do. 15 "whales." This resulted in the Do.24K, a tri-motor with a cruising speed of 137

[251]Ibid., 313.

[252]Ibid.

[253]Womack, 8.

[254]Ibid., 9.

mph and a maximum range of 2,920 miles. The prototype was delivered in 1937, followed by 11 German-built production models in 1937 and 1938. The Dornier 24 possessed the short wave radio's that further enabled the evolution of the *roedel* tactics.[255]

American built planes eventually made up a substantial portion of the Marine Luchtvaartdienst or MLD. As part of an emergency plan to build up the MLD, 48 Consolidated Model 28-5MNE Catalina's (Y-boats), followed by an additional order of 12 aircraft, and were ordered by the Netherlands East Indies in 1940 to replace their Do. 24Ks. These German sea planes, although tough and reliable, were becoming extremely difficult to maintain in the absence of spare parts following the German occupation of Holland.[256] The first two Catalina's, with a fuel capacity of exceeding 14,000 gallons and an air time of 22 hours, arrived in Java in August 1941. The last two deliveries made up a total of 36 in March 1942, just before the Japanese invasion into the archipelago.[257]

In sum, the Dutch submarine tactics were based on four pillars: a secret approach, an offensive mindset, an invisible attack, and effective reconnaissance and radio communications.[258] To further develop this concept, the Royal Netherlands and Netherlands East Indies Navy tried to improve the concept continuously. An example of the constant search for innovation and improvement is provided in an article in the 1939 *Marineblad.* This article states the different research areas that had the full attention of

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[255]Anten., 313.

[256]Womack., 11.

[257]Ibid.

[258]Bosma, 536.

Dutch naval officers. These areas included: stealth, bubble-less launching of torpedoes,[259] increasing the speed of their submarines surfaced and submerged, decreasing the weight of accumulators, increasing the probability of hitting with torpedoes by enhanced fire control systems; and a decreasing the time needed for emergency (crash) dives (based on the Japanese air threat).[260]

By 1939, the Dutch *roedel* tactic had been developed into a mature and very effective concept of operations. Reconnaissance by flying boats was vital to the concept. But by this time the submarine ceased to be central to the strategy for the defense of the Netherlands East Indies and reconnaissance was no longer primarily for the employment of submarines. The *roedel* tactics would never come to full fruition and were never employed effectively against the Japanese invaders in 1942. According to a new generation of naval officers at the Naval War College, the battle cruiser was to become the centerpiece of the defense strategy. This development started in the early 1930s at the Naval War College and would materialize in a new strategy for the defense of the Netherlands East Indies. This caused a changing role for the submarine and resulted in plans to build a battle cruiser centric fleet.

Naval War College in the 1930s: A New Navalist School

In 1929 the biggest economic depression of the modern era began. This depression reached its peak around 1933. The Netherlands East Indies and her motherland, heavily relying on its exports were struck hard and tax revenues collapsed.

[259]The new Dutch submarines were very advanced and were able to launch torpedoes without a trail of bubbles, Anten, 328.

[260]Bussemaker, 581-582.

Expenses for the armed forces shrank significantly. Strong economy measures reduced the defense budgets for the Netherlands East Indies Navy significantly. This caused a halt to the modernizing of the Navy. The economic crisis strengthened the calls for further reductions. Statistics in the 1932 *Marineblad* show a significant decrease in the budgets for the building of new ships. In 1931, the budget for modernizing the fleet was 10.408,000 guilders (6,000,000 USD today). In 1932 this amount decreased to 6.457, 000 guilders.[261] The projected budget for modernization of the fleet for 1933 was only 1.798,000 guilders.[262] The start of the building of new submarines (K IXX and K XX, later renamed in O19 and O20 to emphasize the multipurpose role for the new Dutch submarines--both for the European and Pacific theater--was delayed until further notice.[263] This caused an extended service life for the already obsolescent Netherlands East Indies fleet, including its submarines. In 1931, the Dutch government established the Welter committee, tasked to investigate possible reductions across the complete government budget, including all departments. In its report the committee maintained that, considering earlier budget cuts by 23 percent as from 1922, further budget cuts for the Department of Defense would be irresponsible.[264] In 1934 however, the newly elected Dutch government, vulnerable to public sentiment but also realizing that a further dilapidation of its fleet could harm its vital interests in the Pacific, decided to establish

[261]Uitreksel uit de Rijksbegrooting voor het Dienstjaar 1933, Achtste Hoofdstuk (Defensie), *Marineblad* (1932): 993.

[262]Artikel Algemeen Handelsblad "De Derde Kruiser," *Marineblad* (1932): 449.

[263]Anten, 365.

[264]Uitreksel uit de Rijksbegroting 1933, 993.

another committee on 11 September 1933, named after its chairman, Mr. A.W.F. Idenburg.

The aim of the committee was to develop feasible but responsible options for fiscal measures for the complete Netherlands Armed Forces. The task pertaining to Navy budget cuts was to investigate further budget reductions of thirty five percent with respect to the previous fiscal year. This would imply a reduction of the naval budget of fifty-six percent with respect to the fiscal year of 1930.[265] The committee identified that earlier reductions already significantly reduced the effectiveness of the Navy. The Netherlands East Indies Navy had already reduced its budgets for material exploitation in the previous years. Fuel consumption for ships was strongly put under restraint, ships were docked or put under conservation, the amount of diving hours for submarines was significantly reduced, flying hours and flying allowance for the Marine Luchtvaartdienst were reduced. Additionally, new ships, built at Dutch shipyards and destined for the Netherlands East Indies were kept in the Netherlands due to lower operational costs.[266] The committee already concluded, even before the development of options started, that this had strongly influenced the maintenance of ships, the training proficiency and, above all, the operational readiness of the Netherlands East Indies Navy. The committee opined that the current level of budget reductions could not be maintained.[267] A fleet that does not exercise loses its readiness and its credibility and postponement of the building of

[265]De Bezuinigingsplannen van de Commissie Idenburg, *Marineblad* (1934): 151.

[266]Commissie Idenburg, 151-152.

[267]Ibid., 152.

new ships would further weaken the fleet. The Dutch were in danger of losing their "fleet in being" due to these cuts.[268]

The recommendations of the committee consisted of various approaches towards budget reductions. One of these approaches was to replace a significant proportion of the all-volunteer ship crews by local Indonesian militias. This met much resistance within naval circles. The indigenous population was still considered to have inferior fighting capabilities. Furthermore, the committee developed two plans for the architecture of a leaner naval force for the Netherlands East Indies. The first plan was based on a salami slicing technique of the already small but balanced fleet. The balanced fleet was build according to the ratio 1:4:6 (cruisers: destroyers: submarines).[269] To achieve this, the fleet needed to be expanded with one light cruiser. The design of this cruiser created much debate in naval circles. This debate was centered on how to achieve the perfect balance between speed, armament and protection. The *Marineblad* of 1933 even offered a prize for the best essay on the design of this new light cruiser.[270] Ultimately, the Dutch government decided upon a light cruiser of a water displacement of 5,250 tons, six guns of 15 cm and a cruising speed of 32 miles.[271] The majority of the naval officers considered this cruiser inferior to the contemporary trend for cruisers.[272] Cruisers within

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[268]For a discussion of the "fleet in being" principle, see Chapter 2: Naval Theory.

[269]Algemeen Handelsblad Artikel, "Critiek op den Kruiser," *Marineblad* (1930): 416.

[270]Prijsvraag 1929 kruiser, *Marineblad* (1930): 10.

[271]"G," Ons Nieuwe Kruisertype, *Marineblad* (1930): 432-433.

[272]Algemeen Handelsblad Artikel, "Critiek op den Kruiser," *Marineblad* (1930): 414.

other nations were approximating 10,000 ton water displacement, sometimes called the Washington cruisers.[273] It was asserted that this new Dutch cruiser could only battle effectively against the 15 year-old Japanese light cruisers of the *Luma*- and *Naka*-class.[274]

A second plan of the committee offered some innovative but controversial approaches--the fleet for the Netherlands East Indies should be built around submarines alone and the cruisers should be replaced by bomber airplanes. The committee asserted that this indicated a shift of the main effort for the defense of the East Indies to an air arm.[275] Furthermore the committee contended that this meant that an independent air force had to be established in the Netherlands East Indies. It identified the most suitable type of airplanes for this air force as sea planes based on geographical conditions in the archipelago. It is evident that this recommendation met with a lot of resistance within both KNIL and East Indies Navy circles. The navy would lose its hegemony over the responsibilities for the defense of the archipelago. The KNIL at this time had advanced plans to further enhance its Luchtvaart Afdeling or LVA capabilities. The latter identified that, next to Java, it had responsibilities for the protection of the oil fields, predominantly on Borneo. Light bombers and fighters would give the LVA the reach and speed necessary to effectively operate in these areas. The KNIL worried about losing its LVA, its major trump card in the competition with the navy for the defense of the

[273]H. Hofmann, "Welk type cruiser dient voor de Koninklijke Marine te worden aangebouwd," *Marineblad* (1930): 282.

[274]Ibid., 433.

[275]Commissie Idenburg, 171.

archipelago.[276] The KNIL saw nevertheless an opportunity in the recommendation for a stronger air presence for the Netherlands East Indies.[277] The KNIL Commander used the report to reinforce his efforts to secure budgets for his army. The report of the committee did not result in implementation of its recommendations. It did however result in the establishment of a new committee--the Committee van Kan.[278]

The Committee van Kan was established within a geo-political atmosphere that made even the most pacifist political parties aware of the emerging threats. The political situation in Europe and South East Asia awakened the Dutch government. Instead of budget reductions, an increase of defense spending was needed to create the credible force that would support its neutrality policy. This sense of urgency would even be enhanced by the strategic estimates of the end of 1935. At the end of 1935 it had become clear that the days of peace were over. The League of Nations had lost its power. Italy had annexed Abyssinia (modern day Ethiopia), and Germany was speeding up its re-armament program at an alarming rate. After the Italian invasion of Abyssinia, the Dutch government established a special fund for defense spending. This defense budget, raised to 55 million guilders ($32,200,000) in March 1936, was established to increase fast track procurement for Dutch defense preparations.[279]

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[276]Anten, 369.

[277]Ibid.

[278]Ibid.

[279]H.Th. Bussemaker, "Paradise in Peril, Western Colonial Power and Japanese Expansion in South-East Asia, 1905-1941" (Diss., Amsterdam: Universiteit van Amsterdam, 2001), 358.

The Committee Kan, named after its chairman, and officially named the "Committee for the reconsideration of the composition of the maritime assets in the Netherlands East Indies," was established on 15 December 1934 to investigate the financial consequences of the reduction of surface vessels and at the same time increasing the air capabilities. The committee consisted of its chair, J.B. Kan, four naval members, under which captain J. Th. Furstner, the champion of the currently emerging navalist stream at the Naval War College, and H. Ferweda (the future Commander of the Netherlands East Indies Navy) and four army generals. Although the written order to the committee mentions investigations into the replacements for naval vessels by sea planes, the army component managed to convince the chair that the intent of the written order implied that all air assets had to be considered, including army assets. This was a major blow to the naval officers of the committee. The committee could not agree on the recommendations.[280] Naval members opposed the reduction of naval vessels, army members were proponents of the increase of the Luchtvaartafdeling capabilities. The chair was leaning towards the army position. The army officers contended that it was futile to maintain cruisers because of their operational costs and their questional fighting effectiveness that could hardly influence the outcome of a battle against the projected enemy.[281]

The committee recommended a reduction of the number of naval cruisers and a reduction of flying boats from 72 to 54. It is evident that this would further reduce the

[280]Anten, 370.

[281]P. E. van Loon. "De ontwikkeling van het Nederlandse Luchtwapen," Militaire Spectator (Den Haag: Koninklijke Vereniging van Krijgswetenschappen, 2013), 234.

effectiveness of the *roedel* tactics of the Netherlands East Indies Navy that relied on effective reconnaissance by flying boats. Furthermore the committee recommended 108 air *cruisers* for the KNIL Luchtvaartafdeling. It is remarkable that the committee used the term cruiser, a term that appeared for the first time in German special literature in the late 1920s. The term is clearly incorporated to emphasize the perceived convertible nature of the naval cruiser and the bomber. In essence the committee intended single engine multi-purpose planes that could perform both the reconnaissance and the light bomber role.

The Minister of Defense did not implement the recommendation of reducing the number of cruisers but the final report resulted in the procurement of a series Glenn Martin 136 WH-1 middle weight bomber for the Luchtvaartadeling of the KNIL in 1936.[282] During the Japanese invasion in 1942 the Luchtvaartafdeling possessed 120 of these bombers of the WH-1 till WH-4 types. The government's intent to procure these bombers resulted in a strong re-emerging inter-service rivalry between the KNIL and the Netherlands East Indies Navy. This rivalry over issues connected with the military application of airpower was especially acute because of the enormous resources at stake, in the competition between the KNIL and the Netherlands East Indies Navy over budgets and responsibilities. The establishment of a special fund for fast track procurement would even stir up more animosity between the service components in 1936. This inter-service debate was centered on the accumulation of resources and authority at the expense of their sister service, regardless of the extent to which this detracted from defense preparations. Central to this debate were the capacities of the bomber versus the battleship, the land bomber versus the seaplane, and command authority.

[282]Ibid., 235.

The Netherlands East Indies Navy and the KNIL defended their ground at the expense of the bigger picture; an effective defense of the archipelago. Both parties did not shrink from public debate. This would even lead to a growing concern within the Dutch electorate that defense spending was not rationalized effectively.[283] Standpoints of the service components were expressed in military professional magazines like the *Militaire Spectator* and *Marineblad.* Proponents of the bomber contended that the youngest acquisition of the Luchtvaartafdeling, consisting of squadrons of Glenn Martin bombers, could automatically assume responsibilities for the defense of the archipelago in the outlying areas from the Navy.[284] Land based bombers could carry more payload than seaplanes and would be therefore more effective against Japanese vessels. Furthermore the speed and the range of land based bombers were superior to the sea planes.

Opponents of the bomber, in other words the naval standpoint, argued that the probability of hitting a naval vessel with a bomb was highly doubtful. Furthermore cruisers would bring an all-weather capability that land bombers lacked and cruisers could operate at night. Additionally land bombers needed airfields, also in the outlying areas. These airfields were very vulnerable to Japanese attacks and would provide the Japanese excellent springboards for the attack on the archipelago.[285] Another viewpoint was that air bombers were part of an inflexible ground based system, as opposed to flying

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[283]A. A. fresco, "Weermachtsmiddelen in het licht van den Indische Defensie-Grondslagen," *Marineblad* (1939): 729.

[284]E. Martare, "Het gebruik van operatieve luchtstrijdkrachten in den Ned.-Indischen Archipel," *Marineblad* (1939): 503.

[285]J. P. H. Perks, LCDR, "Kruisers en Vliegtuigen," *Marineblad* (1936): 736-764.

boats and floating planes that could be launched anywhere in the archipelago and that made employment of airpower unpredictable for the Japanese. Another point in case was the dispute over command and control. The Defense of the Netherlands East Indies was not placed under a central operational command. The Governor General acted as the Commander in Chief but both service components operated unilaterally--in other words, there was no overall joint command such as we find with Joint Task Force (JTF) Commander in US doctrine today.[286] Naval officers feared that the KNIL Commander could interfere with naval actions by employing his bombers.[287] This inter-service dispute continued until the start of hostilities in March 1942 following the Japanese invasion. Inter-service rivalry and the subsequent struggle for securing budgets inhibited the development of a coherent concept for the defense of the archipelago.

The New Navalist Discourse Neutralizes the *Roedel* concept

Not by coincidence, around the same period of the re-emerging animosity between the Navy and the KNIL, a navalist discourse emerged among a new generation of naval officers at the Naval War College. These naval officers envisioned a more prominent role for the cruiser and made it pivotal to a new strategy for the defense of the Netherlands East Indies. This new strategy assigned an inferior role to the submarine and

[286]"A Joint Task Force (JTF) is a joint force that is constituted and so designated by a Joint Task Force establishing authority (i.e., The Secretary of Defense, etc.) to conduct military operations to a specific situation. Usually it is part of a larger national or international effort. CJTF's have full authority to assign missions, redirect efforts, and direct coordination among subordinate commanders," Chairman of the Joint Chiefs of Staff, Joint Publication 3-33, *Joint Task Force Headquarters* (Washington, DC: Chairman of the Joint Chiefs of Staff, 2007), 1-1.

[287]A. S. Pinke, LCDR, "Eenheid in Indie's Defensie-Opvattingen," *Marineblad* (1936): 729.

in essence marked the end of the further development and perfection of the *roedel* tactics. It should be noted that, next to strategic considerations, inter-service rivalry played a significant role in the promotion of the cruiser. A more central role of the cruiser in the defense of the Netherlands East Indies could form a counterweight against the lobby for budgets for airplanes for the KNIL.[288]

The Dutch Naval War College or *Hoogere Marine Krijgsschool* was established on 7 January 1921 in The Hague. Effectively this College acted as an advisory body for the Chief of the Naval Staff of the Royal Netherlands Navy. The school was not big and its annual intake consisted of three Lieutenant Commanders. The length of the course was two years and in essence this meant that six naval officers at a time followed the curriculum at the college. The students concentrated on naval theory and war gaming. Tactical map exercises formed one of the basic underpinnings of the education of this select group of naval officers. Although the college was not big, its influence on the course of Dutch naval strategy in the interwar period proved massive.[289] After Lieutenant Commander J.T. Furstner took command of the war college, the students started to incline towards a new navalist discourse, called the *Furstner-school*.[290] This discourse now competed with the Dutch *Jeune Ecole* discourse that had made the torpedo central to its fleet design.

The new navalist discourse was based on a new strategic assessment. Dutch foreign policy for East Asia was based on three elements: neutrality, an economic open

[288]Anten, 397.

[289]Ibid., 382.

[290]Ibid.

door policy, and a paternalistic care for the indigenous population.[291] The open door policy allowed foreign companies to free access the raw materials and the internal markets in the Netherlands East Indies. The hidden objective was that foreign investment, largely by the major powers, would prevent any attempt for domination by one of the powers. By profiling themselves as enlightened and efficient administrators, the Dutch wanted to prevent any foreign intervention. The open door policy led to large Japanese investments in the Netherlands East Indies. Next to this economic interest the Japanese imported almost 20 percent of its oil products from the archipelago. Next to its military expansion, the Japanese economic penetration of the Netherlands East Indies was a matter of concern to the Dutch government. During the Manchurian crisis the Dutch government maintained strict neutrality. Despite its membership it did not join in the condemnation by the League of Nations in 1933.

For the Dutch however it was crystal clear that a crisis in South Asia was emerging. The Japanese declared to the Dutch Ministry of Foreign Affairs that it had designs in New Guinea as a location to relieve the Japanese population pressure. Furthermore, the Japanese withdrawal from the League of Nations after its invasion of Manchuria added to the concerns of the Dutch government, leading to a full mobilization of its armed forces and a subsequent stand-down in 1933. Another warning for the emerging crisis was the announcement of the Japanese Government that it no longer considered the Washington Nine-Power Treaty as being valid. At the same time Japanese officials declared that Japan deserved a more prominent role in South East Asia and that

[291]Bussemaker, 305.

it wanted to integrate the Netherlands East Indies economy within a greater East Asian co-prosperity sphere.[292]

The main reason for the Japanese designs on the Netherlands East Indies was oil.[293] This was noticed by the strategic planners at the Naval War College in The Hague. The incident over Manchuria led to serious war gaming at the Naval War College. The scenario was based on Japanese attempts to secure the oil terminals at the harbors of Tarakan and Balikpapan on Borneo. In this scenario the submarines would be employed against enemy convoys that transported crude oil from Borneo to the Japanese homeland. To prevent this, the Imperial Japanese Navy had to protect its convoys with destroyers and light cruisers. Dutch cruisers would operate against these protection vessels. To operate against these Dutch cruisers the Japanese had to send its own cruisers or battleships. But, rationalized the naval officers, the Japanese would never risk sending its main fleet to the archipelago with the United States Pacific Fleet still intact and close to its homeland.[294] It was contended that the strength of the Netherlands East Indies naval power would determine whether an aggressor would dedicate the necessary fleet capabilities for the protection of its convoys.[295] This rationale clearly indicated that the new strategy was based on an old paradigm: the risk strategy. The Dutch strategy was shifting towards a *guerre the course* strategy, aimed at defeating Japanese convoys on

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[292]Bussemaker, 311.

[293]Ibid., 315.

[294]A. A. Fresco, "Weermachtsuitbreiding in het licht van de Indische Defensiegrondslagen," *Marineblad* (1939): 736.

[295]Ibid., 735.

their long and vulnerable sea lines of communication. Furthermore, the fleet had to operate against Japanese *coup de mains* in the outlying areas in the archipelago. Command of the Sea re-emerged as the foundation of the Netherlands East Indies defense strategy.[296]

For these operations throughout, and even outside, the archipelago the central role of the Netherlands East Indies Navy had to shift from the submarine to the cruiser. The *Furstner-school* contended that cruisers were more suitable for effectively operating against *coup de mains* than submarines.[297] This battle would be characterized by confrontations between surface vessels. The cruisers offered the speed, armament, and reach necessary to operate effectively against other cruisers, preferably in a forward defense role. The naval officers identified the following roles for the submarines within the new concept: reconnaissance tasks on the main avenues of approach, defense of areas vulnerable to landing operations, and support to cruisers and destroyers.[298] The new mission profile for the cruisers enlarged the area of operations for the entire fleet. This meant that the submarines had to operate in a larger area than with the old *roedel* concept. This approach was diametrically opposed to the role for which it was designed for. Instead of concentration, the submarines had to spread to cover the vast archipelago. Furthermore, the reconnaissance planes would have to support the cruisers in their new

[296]J. W. F. Nuboer, "De verdediging van Nederlandsch-Indie een maritiem vraagstuk," *Marineblad* (1939): 904.

[297]Fresco, 737.

[298]Anten, 378.

role. It is evident that the new strategy, based on navalist paradigms, meant the devaluation of an innovative submarine warfare concept.

The new line of thought met with resistance from Batavia. This marked the beginning of a growing dispute between the theorists at the Naval War College and naval officers within the Netherlands East Indies. This intra-service rivalry would materialize in a growing antagonism between Vice Admiral Furstner, in The Hague and Vice Admiral Ferweda, Commander of the Netherlands East Indies Navy. The Netherlands East Indies Governor-General and his staff traditionally played a major role in the discussions over budgets for the fleet and the design of the strategy. This influence was diminished as a result of the global economic crisis. This crisis had struck the Dutch colony hard. Historically, the Netherlands East Indies contributed approximately 45 percent to the total defense budget for the Netherlands East Indies fleet. As a result of its weaker financial position the colony contributed less than the motherland and the imperial character of the Royal Netherlands Navy was further strengthened, resulting in more influence on naval matters for the naval staff in The Hague and its advisory body at the Naval War College.[299] The relationship between The Hague and Batavia would become even more strained when Vice Admiral Furstner became Chief of the Naval Staff in 1936.[300]

The Munich crisis acted as a catalyst for strong calls within Dutch society for a stronger defense, in particular a strong battle fleet to protect the Netherlands East Indies. This crisis illustrated the weakness of the two major Western Powers, England and France, and marked the bankruptcy of the League of Nations. The public realized that

[299]Teitler, 21.

[300]Anten, 383.

support from these allies was not guaranteed. For the benefit of peace these countries had sacrificed Czechoslovakia. The Dutch realized that its interest in the Far East was endangered and that the possession of a powerful fleet could act as a deterrent to Japanese expansionism. A press campaign emerged, with the navalist organization *Onze Vloot* (Our Fleet) as one of its champions. Furthermore, a strong lobby from industrialists with interests in the Netherlands East Indies pleaded for a stronger defense. Several members of the Dutch Parliament started to urge Minister of Defense van Dijk for strong reinforcements of the Netherlands East Indies fleet during a debate over the defense budget for fiscal year 1939.[301] The call for battleships was central to this debate but the Minister of Defense did not prove susceptible to the arguments for battleships. The Minister contended that he wanted to maintain the cruisers as the largest warship, mainly due to financial considerations. A battleship at the time averaged between 60 and 70 million guilders (35,000,000 USD).

Vice Admiral Furstner, now Chief of the Naval Staff saw the new navalist sentiments within the population and the government as an opportunity to fulfill his strong desire for battleships. Regular battleships seemed impracticable. Together with other naval officers he developed recommendations for the building of three small, fast, lightly armored battleships. These types were put into service in France and Germany and were called battle cruisers in the manuals.[302] Furstner contended that the Netherlands Indies should not count on allied support and should be able to act independently in case

[301]Rijksbegrooting 1939, Uitreksel uit de Memorie van Antwoord aan de Tweede Kamer, *Marineblad* (1938): 1068-1071.

[302]Anten, 404.

of war. The purpose of the battle cruiser-centric fleet was to interdict the enemy lines of communications to such a degree that an occupation of the archipelago would not offer advantages to the enemy.[303] He estimated that for an attempt to occupy the archipelago, the enemy needed at least four convoys. If the Netherlands East Indies Navy could employ four fast, heavily armed, and suitably protected ships against these convoys the enemy would most likely abandon its designs.[304] With four battle cruisers the enemy would have to take measures for the protection of its convoys and at the same time assume risk elsewhere. His conclusion was that four battle cruisers would provide the Netherlands East Indies with a cogent solution for its defense problems for the next decades.

Furstner's recommendation resulted in a request to the Naval Staff by the Minister of Defense to develop options for a fleet for the Netherlands East Indies centered on the battle cruiser. On 3 April 1939 the Government discussed a proposal by the Minister of Defense for the construction of three battle cruisers. To speed up the building process the Minister proposed approaching the Germans for the blueprints of the battle cruisers *Gneisenau* and *Scharnhorst.*[305] His arguments were that this would shorten building time and that the Germans would most likely be prepared to sell this information due to its weak foreign exchange position.

Next to the approach of the Germans for battle cruiser designs, the Dutch also intensified contacts with the French, in the hope of containing drawings of the

[303]Teitler, 16.

[304]Ibid.

[305]Ibid., 21.

Dunkerque-class battleship. The Germans proved somewhat reluctant about sharing information on their ships. The main reason was that they had misled other nations on their announcements of nominal displacements of their battle cruisers. Whereas the tables stated 26,000 tons standard, the ships were closer to 32,000 tons standard.[306] The proposal was not discussed with the Commander of the Netherlands East Indies Navy.[307] The arguments that the Netherlands would take the full weight of financing and exploitation costs are indicators for the waning influence of the Netherlands East Indies.

Once informed, Vice Admiral Ferweda, the Commander of the Netherlands East Indies Navy, showed his discontent with the new plans. He opined that is was highly doubtful that the projected Dutch Battle cruisers were a match for the successor of the Japanese *Kongo*-class, the projected enemy in the Indies Archipelago. This contention would prove accurate when the British intelligence service informed the Commander of the Netherlands East Indies Navy about laying the keels for two new Japanese battle cruisers that seemed superior to the designs of the Dutch cruisers. Furthermore the Commander of the Indies Fleet asserted that the naval installation at Soerabaja (Surabaya) was unsuitable for these large ships. Next, he contended that acquisition of the blueprints of the *Gneisenau* or *Scharnhorst* would not save time. The design needed adaptations to meet demands for the tropical climate, predominantly cooling installations for the diesel-electric engines and air conditioning. Lastly, he maintained that the building of the ships would be finalized in 1945, too late by his calculations.[308] The

[306]Bussemaker, 365.

[307]Teitler, 21.

[308]Ibid., 25-26.

Commander of the Netherlands East Indies Navy, fully aware of these practical problems and convinced of the enormous potential of the evolved *roedel* tactics of his fleet, favored an expansion of his fleet to 24 destroyers and 24 submarines.[309] This line of thought diametrically differed from the theories from the navalist school under Furstner. It signifies the different positions the Netherlands East Indies and The Hague took.

The new fleet plan roused an intra-service rivalry over issues connected with the strategic concept for the defense of the Netherlands East Indies. Proponents of the new battle cruiser contended that the nucleus of the new balanced fleet should be capable of going into action against an enemy fleet under favorable conditions and avoid it under unfavorable conditions. The geographical conditions of the archipelago offered advantages for this new fleet design. The vast archipelago and its approaches offered long enemy lines of communications that would offer opportunities to attack on weakly defended areas. Furthermore it would be difficult for an enemy to blockade the Dutch fleet in its port due to the long reaction times that the long approaches offered. Last, the enemy could not dedicate its main fleet over a long time to the archipelago.[310]The opposition, from the Netherlands East Indies and the Ministry of Colonies, pointed at Vice Admiral Ferwerda's argumentation and added their own arguments in support on the problems with manning these battle cruisers. Ferwerda added to the discussion that The Hague interfered too much with the operational responsibilities of the Commander of the East Indies Fleet and argued that propaganda and not rational argumentation had influenced the Dutch government. In order to bring a halt to the dispute between Batavia

[309]Ibid., 26.

[310]Nuboer, 1044.

and The Hague, the Dutch Government installed a technical committee to develop recommendations on the architecture of the fleet. The chairman of this committee, however, was Vice Admiral Furstner. That the outcome of the recommendations was no surprise is evident. Although the Ministry of Colonies also developed a recommendation for the design of the Netherlands East Indies fleet, more similar to the already existing situation, the Dutch government informed the Dutch Parliament about its intent to start building three battle cruisers on 10 February 1940.[311] These cruisers, it's final design more resembling the German O, P, and Q-classes from their Z-plan,[312] were projected to have a speed of 34 knots, a water displacement of 27,988 tons, a main armament of 9 German Krupp 28.3 cm (11") guns with a maximum range of 42,600 meters, and 22, 5 cm armor.[313] The German invasion of 10 May 1940 would scuttle Dutch construction of these battle cruisers.

Pre-War Troubles: The Strategy Unravels

The German invasion of the Netherlands delivered the Dutch Government foreign policy a dilemma. After a few days of fighting, the Dutch Queen Wilhelmina, the royal family and the Dutch Government fled to London to form a government-in-exile. Technically the Dutch were at war with Germany and could no longer follow their neutrality policy. In the Pacific however, peace still existed. Within the Dutch Government there was a strong inclination to move the government-in-exile to the

[311]Teitler, 63-64.

[312]Anten, 506.

[313]Ibid., 504.

Netherlands East Indies. The Dutch Queen refused and the Government decided to maintain operating from London.[314]

The first months after the Dutch capitulation in Europe, the Dutch government took an aloof position towards the British Government. The Dutch Government, generally perceived as weak, incompetent and amateurish, wanted to abide the consequences of the initial stages of the war. It was far from certain whether the British were a match for the German war machine at the time. The Dutch Government had not declared war on Italy yet and maintained a distant posture towards Vichy France. The outcome of the Battle of Britain and early reports from German oppression of the Dutch population marked a shift in the position of the Dutch Government. The Dutch policy of being neutral in the East and being a British ally in the West resulted in delicate situations. For example, German naval vessels were operating in the Pacific area, also near the East Indies archipelago. The British approached the Dutch whether they would operate against these German ships and requested the Dutch to mine the approaches to Singapore through the Riouw archipelago. The Dutch Government, by the mouth of the Governor General in the Netherlands East Indies, declared that the Netherlands East Indies fleet would fully cooperate with the British Royal Navy against the Germans. On the other hand the Governor General stated that the Netherlands East Indies would not automatically declare war on Japan in case of hostilities between Japan and Britain. This created a dilemma for the Dutch. They had become an ally of the British in the West but maintained its strict neutrality in South East Asia in order not to antagonize Japan.[315]

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[314]Bussemaker, 303.

[315]Ibid., 304.

Further complicating matters was that the Dutch Government needed British and American support for its rearmament program for the East Indies. Of the same tenor as the Dutch, the British proved very reluctant to give any guarantees to the Dutch for support in the event of a Japanese invasion of the Indies archipelago.

Even before the war the Dutch government tried to discuss guarantees on British support against a Japanese attack. Already in 1936, the Dutch Prime Minister, also Minister of Defense *ad interim*, Mr. H. Colijn had secret talks with British military attachés in The Hague and British officials in London. In these secret meetings Colijn asked the officials for advice on the defense of the Netherlands East Indies. Colijn must have anticipated the emerging realization with the British that the defense of Singapore was tied to the defense of the Netherlands East Indies. The British declared that the status quo in the Pacific, including the integrity of the Netherlands East Indies was a major British interest but they did not discuss any support.[316] The British wanted to encourage the Dutch to take steps for their own defense.[317] The British rationalized that its fleet would be necessary in Europe against Germany and based on its One-Power standard lacked the capacity to give credible support to the Dutch in the event of a Japanese invasion.[318] The British clearly comprehended that they had not done enough to improve its own defenses against the Japanese. They also contended that the Dutch had been too aloof in building a strong defense for the Netherlands East Indies. The British made

[316]UK National Archives, CAB/24/263/0025, 1936.

[317]Bussemaker, 302.

[318]Cabinet, "Defense Problems Holland and The Netherlands East Indies," UK National Archives, CAB/24/263/0025, 1936.

Dutch armament programs for the Netherlands East Indies a precondition for talks over support and even recommended the Dutch Government on purchasing British airplanes for interoperability.[319] Till that time the Netherlands East Indies would officially be "a matter of concern" to the British Government.[320] This suggests a correlation with the line of reasoning from the Furstner-School that the Netherlands East Indies Navy could not count on allied support and needed cruisers to act independently. Officially, there were no talks between the British and the Dutch Government. In reality, the British forces in the East and the forces of the KNIL and the Netherlands East Indies Navy had secret contacts.[321]

The real reason for the British caution against guarantees for the Dutch was that it, considering its military weakness in the East, needed American guarantees.[322] The British envisaged that support to the Dutch could draw them into a war with Japan which it was bound to loose without American support. The British War Cabinet decided that it was only willing to consider a security guarantee to the Dutch, if Britain in its turn received assurance from the United States.[323] But in 1940, American guarantees were highly unlikely, in a period where President Roosevelt aimed to get re-elected.

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[319]Bussemaker, 209.

[320]Ibid., 222.

[321]Ibid., 226.

[322]Ibid., 223.

[323]War Cabinet, "Assistance to the Dutch in the event of Japanese aggression in Netherlands East Indies," UK National Archvies, CAB/66/10/39, 1940.

Meanwhile the tensions between Japan and the Dutch in South East Asia were growing. As mentioned earlier, growing nationalism in Japan caused increasing concern with the Dutch Government in the late 1930s. The Japanese claims that the Netherlands East Indies economy should be integrated in a Greater East Asia co-prosperity sphere added to these concerns. After the United States had taken economic action against Japan by an unannounced withdrawal from the 1911 Trade Treaty, the Japanese were in urgent need of raw materials in 1939. This resulted in a request from the Japanese Government to the Dutch Government for a trade conference in February 1940. The Japanese agenda was to neutralize the existing trade barriers between the Netherlands East Indies and Japan. The German invasion inhibited the Dutch from answering the request and the Japanese offered new proposals to the Dutch government-in-exile on 20 May 1940.[324] In essence the Japanese requested a disproportional volume of raw materials from the Dutch. The Dutch Government, anxious not to antagonize the Japanese and in need for time to strengthen its defenses, declined the request but offered constructive talks over feasible amounts of shipments. These trade talks started on 16 September 1940.[325]

The September Dutch-Japanese trade talks revolved around oil supplies. The Japanese demanded vast volumes of oil from the Dutch.[326] By contrast: the annual shipment of Netherlands East Indies oil products to Japan normally approximated 650,000 tons. The new Japanese demand totaled 3,150,000 tons per year. The Japanese met with a Dutch refusal and signed contracts for significantly smaller volumes of oil

[324]Bussemaker, 317.

[325]Ibid., 318.

[326]Ibid.

products. This meant a diplomatic victory for the Dutch government and the Dutch stubbornness indicated a changing posture towards Japan.[327] Next to fears about supporting the Japanese war economy, the Dutch were afraid that the Japanese would ship raw materials to the Germans. After the war these suspicions proved accurate. Captured German documents showed evidence that the Japanese were using the Trans-Siberian railway to transship raw materials to Germany. The American oil embargo further exacerbated relations with the Japanese on 26 July 1941. The Dutch had agreed upon payment for their oil in dollars with the Japanese, but after the United States had begun to freeze Japanese assets, the Japanese, lacking hard currency, could not obtain the Netherlands East Indies oil.[328] The Japanese were quick to react and established obstructing measures against Dutch imports.

The Singapore staff talks were secret talks between Britain, Australia, New Zealand, and the United States aimed at exchanging estimates of the security situation and coordinating future defense plans at the operational level. The first talks, held in October 1940, saw Dutch representatives invited but they did not attend, still holding to a neutrality policy that inhibited any formal agreements with potential allies.[329] During these first talks, the estimates revealed that probable points of Japanese attack were Hong Kong, British Borneo, Malaya, Burma, Thailand, and the Netherlands East Indies. Recognizing the Dutch capabilities as a significant factor in a coalition defense, the

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[327]Ibid., 319.

[328]Edward S. Miller, *Bankrupting the Enemy: The U.S. Financial Siege of Japan Before Pearl Harbor* (Annapolis, MD: Naval Institute Press, 2007), 191-119.

[329]Bussemaker, 245.

attendees of the first staff talks decided to urge the Dutch to participate in the next round of discussions.[330]

The second Singapore staff talks were held between the British and the Dutch in November 1940 with the attendance of United States observers. Items on the agenda were mutual support and reinforcements, mainly in the area of air assets. Reconnaissance zones were developed and coordinated. Additionally, pre-stocking of ammunitions and supplies were discussed for Dutch planes that would operate from Singapore. Out of reciprocity, the Dutch would pre-stock ammunition and supplies for British squadrons in the East Indies archipelago. The results of the conference would be further developed during technical meetings between British and Dutch officers in February 1941 in Batavia.[331]

The third round of talks was held from 22 to 25 February 1941. These talks were held between the British Commonwealth, the United States and the Netherlands. During this meeting Singapore was made the centerpiece of the allied regional defense. During these talks the Dutch agreed to contribute to this defense with three bomber squadrons, one fighter squadron and six submarines.[332] The Australians would take over a part of the Defense of the Netherlands East Indies, recognizing the capability gap that the Dutch would leave with its Singapore shift. By this point the Dutch government understood that it had to jettison its strict neutrality policy. In London, the Dutch government became more and more lenient and compliant toward the British. To signal its determination to

[330]Ibid., 246.

[331]Ibid., 247-248.

[332]Anten, 578.

defend the Netherlands East Indies and to signal its new discourse, the Dutch officials promised their support to the defense of Singapore. With this new discourse the Dutch hoped to convince the British that they meant business. Furthermore, the Dutch Government intended to secure British guarantees for its colonial possessions after the war.[333]

The fourth and fifth Singapore meetings resulted in further cooperation between the associated powers. Central organizations for radio frequency management and call signs were established. Elements of the Netherlands East Indies Navy started conducting exercises with the Royal Navy. Although the participants of the Singapore staff talks shared common goals, different perspectives on the *casus belli* with Japan and reluctance to formalize the agreements into treaties also exposed fundamental differences between the powers.[334] As mentioned, a most significant outcome of the Singapore talks was the Dutch promise to detach bombers, fighters, and submarines to Singapore and to put these eventually under British command. In essence this meant that almost one third of the Netherlands East Indies submarine fleet would operate far outside its intended area of operations.[335] The Dutch *roedel* concept, designed for the confines of the Java Sea and its entrances, had already been marginalized by its new supporting role vis-a-vis Dutch cruisers. The unraveling of the submarine division in support of the Singapore defense implied a further spreading of the submarine capacity and dealt the fatal blow to a

[333]Bussemaker, 249-250.

[334]Ibid., 249-250.

[335]Anten, 580.

promising concept.[336] This was almost anti-Mahanian, violating his dictum of "never dividing the fleet."[337]

After the Americans established an oil embargo against the Japanese on 26 July 1941, they engaged the British and the Dutch to adapt this same posture. To punctuate its request, the Americans stopped the supply of armament to the Dutch.[338] The Dutch tried to use this request to strengthen its position within the Singapore staff talks. They tried to focus British attention to their position by declaring that a British signature might persuade the Dutch officials to join the British-United States oil embargo against Japan. This was *realpolitik* in *optima forma* and another indicator that the Netherlands had left its strict neutrality policy. The Dutch Government had taken a more pragmatic approach to look after its interests. Another indicator of the Dutch strategic shift was the Dutch Government decision to declare war on Japan in the event of Japanese aggression against the United States; Britain or Russia was already made on 28 October 1941.[339]

As indicated before, the British War Cabinet decided that it was only willing to consider a security guarantee to the Dutch if Britain in its turn received assurance from the United States. The breakthrough of this deadlock came on 1 December 1941, just short of the Japanese attack on Pearl Harbor. During a meeting with the British, the United States President Roosevelt stated that "we should obviously all be in [this]

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[336]Ibid., 581.

[337]A. T. Mahan, *Naval Strategy*, 1911, reprint, FMFRP 12-32 (US Marine Corps, Quantico, 1991), 394-395.

[338]Bussemaker, 318.

[339]Ibid., 325.

together," after questions about an American response to potential Japanese aggressions against the British dominions in the Far East. The British perceived this as an American support guarantee. During a follow on meeting President Roosevelt confirmed the American support.[340] Based on these guarantees, the British finally confirmed security guarantees to the Netherlands East Indies on 5 December 1945. In a letter to the Dutch government-in-exile in London, the British Minister of Foreign Affairs, Anthony Eden, confirmed cooperation with the Dutch to the fullest extent.[341] On 7/8 December 1941, the Imperial Japanese Navy (IJN) conducted a surprise attacks throughout the Pacific, including against the United States Pacific Fleet at Pearl Harbor. The Netherlands government-in-exile declared war on Japan seven hours later, even before the US declared a state of war.[342]

The Netherlands East Indies Forces and coalition partners formed the American, British, Dutch, and Australian Command, ABDACOM, doomed to failure, in a desperate attempt to organize a coherent defense against the Japanese.[343] Different strategic priorities inhibited the allied forces from building a coherent defense strategy. The Dutch stressed the need for substantial support in the Netherlands East Indies but the center of the ABDACOM area of operations was weakened due to the pivotal role of Singapore in

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[340]War Cabinet, UK National Archives, CAB/65/24/124/4, 4 December 1941.

[341]Bussemaker, 326.

[342]F. C. van Oosten, *The Battle of the Java Sea* (Annapolis: Naval Institute Press, 1976), 12.

[343]Ibid., 14; for a comprehensive discussion on ABDACOM see also Stephen Shepard, "Amberican, British, Dutch, and Australia Coalition: Unsuccessful Band of Brothers" (Master thesis, Command and General Staff College, Fort Leavenworth, KS, 2003), passim.

the defense and the employment of substantial elements of the Netherlands East Indies Navy for the defense of Singapore. The Japanese strategy disrupted ABDA Command's efforts to stem the invasion. Japanese air superiority set the conditions for allied failure. Furthermore, poor integration of the allied forces, the lack of a joint doctrine, the lack of joint training, and an inadequate command and control structure resulted in an ineffective fighting force. In March 1942, the IJN occupied the main islands of the NEI following the Battle of the Java Sea.

Conclusion

During the early 1930s the Netherlands East Indies fleet had developed a innovative submarine warfare concept, centered on concentrated attacks against a potential enemy's invasion fleet. The Dutch Netherlands East Indies Fleet officers identified weaknesses in this promising concept. Recognizing the vulnerability and predictability caused by the narrow straits and the rapid developments of the Japanese air arm, they left the doctrine of predominantly static submarine formations. Rapid concentration based on early reconnaissance still formed the basic underpinnings of the concept but the submarine divisions had to be capable of concentrating throughout the archipelago and attack at unpredictable locations. This raised the need for submerged approaches, based on the air threat and submerged radio traffic. The innovation of the periscope antenna, the *snuiver*, an air inlet that enabled long submerged approaches and the import of innovative, high end German hydrophone equipment enhanced the already promising Dutch *Roedel* concept, designed to defeat enemy convoys in the waters around the archipelago.

The emergence of a new navalist discourse, the *Furstner-School*, based on sentiments within the Dutch Naval War College, inhibited a further gowth of the promising *Roedel* concept. Dutch students of the War College, recognizing the obsolescence of the Dutch fleet as a result of the biggest economic crisis of the 20th century and the potential for future conflict with Japan, envisioned a pivotal role for cruisers for the defense of the Netherlands East Indies in the late 1930s. Based on their strategic calculations, the product of extensive wargaming, they developed a new risk-based strategy. If the Netherlands East Indies fleet was centered on cruisers, the Japanese would have to send their capital ships to the archipelago, but it would never risk employing its main fleet in the waters of the archipelago when facing other threats in the Pacific. This "Blue Water" discourse was founded on Mahan's related paradigms of sea power and command of the sea. The cruiser centric fleet would have to operate against the enemy's lines of communications, even outside the confines of the Java Sea. This forward defense would unravel the Netherlands East Indies Fleet operational concept. These new paradigms dictated a new role for the submarine. In this new role, the submarine would play a supporting role to the cruisers and had to converge as opposed to concentrate to cover the vast waters in its new supporting role.

Discussions within the Dutch Navy coincided with an emerging inter-service rivalry. The controversial report of a 1934 committee, identifying a more prominent role for the bomber of the *Luchtvaartafdeling* of the KNIL for the defense of the outlying areas of the archipelago, resulted in the start of the acquisition of a series of 108 WH-1 Glenn Martin middle-weight bombers in 1936. This would stir up animosity between the service components. This inter-service debate was centered on the accumulation of

resources and authority, regardless of the extent to which this rivalry detracted from defense preparations. These debates revolved around the capacities of the bomber vis-à-vis the cruiser.

The powerful new navalist discourse and the ever growing concerns over the Japanese threat in the Pacific resulted in Dutch plans to build powerful battle cruisers based on German designs. This development aroused animosity between the Commander of the Netherlands East Indies Fleet and the Chief of the Naval Staff. Central to this intra-service debate were operational roles and responsibilities. The German invasion of the Netherlands of 10 May 1940 pre-empted the Dutch from building these battle cruisers. The German invasion posed problems for the future Dutch government-in-exile. Although technically at war in the West it was still neutral in the East. This inhibited the Dutch from contributing to any formal alliances with the British and the Americans.

The secret 1941 Singapore talks further diminished any Dutch hope of employing its innovative submarine warfare concept. The Dutch, based on their new cooperative approach towards the Allies, promised half of their submarine fleet, fighters, bombers and surface vessels to the British in support of the defense of Singapore, identified as vital to the British interests in the East. This support caused the division of the Netherlands East Indies fleet and further unraveled a promising naval warfare concept. Britain, initially reluctant to officially guarantee support to the Netherlands East Indies, revised its posture after American guarantees in December 1941. The Dutch declared war on Japan, shortly after the Japanese surprise attacks in the Pacific, including the attack on Pearl Harbor. In a desperate attempt to stem Japanese advances in the Netherlands East Indies area of operations, Allied Forces formed the American, British, Dutch, and

Australian (ABDA) Command in January 1942. This short lived command proved incapable of halting the Japanese advances and was disbanded in March 1942. Command and control issues and disagreement on naval strategies within ABDA Command would ultimately strike the finishing blow on a highly innovative submarine warfare concept. The *Roedel*-concept had sunk.

CHAPTER 6

CONCLUSION

Patterns of Innovation

The primary research question of this thesis was: How effectively did the Netherlands East Indies Navy innovate in the period from 1900-1942? To furnish historical data for exploring this question this thesis drew primarily on the historical examples of peacetime military innovation within the Netherlands East Indies Navy in the period from the beginning of the twentieth century until the start of the Japanese invasion of the Netherlands East Indies archipelago. Research revealed that the Netherlands East Indies Navy organizational climate encouraged innovative thinking on naval warfare but that several factors inhibited innovation to its maximum potential. Innovation was not achieved through a fixed process, following a modeled roadmap controlled by military authorities. Military innovation is fundamentally nonlinear. Its complexity makes it difficult to analyze causality. Changes in the operational environment or technology do not always correlate with the ways armies try to "get it right" in preparing for the next war. Nevertheless it will prove useful to identify patterns of innovation to extrapolate the character of future wars under conditions that show a striking resemblance with the situation of the Netherlands East Indies in the timespan covered by this thesis. Resemblances are found in a resource-constrained environment, a rapid pace of technological innovations and a reduced political willingness to invest in defense spending, in part due to profound global economic depression. Similar to the patterns of innovation suggested by Allan R. Millett, the historical case study of the Netherlands East Indies revealed the following patterns: "the Importance of Strategic

Calculations, the Relationship between Technology and Innovation, the Organizational Politics of Innovation, and Civil-Military Collaboration."[344]

Strategic Calculations

The Dutch Government and the Netherlands East Indies Naval officers anticipated the enemy it would eventually fight in March 1942. The defense of the Netherlands East Indies was not based on a specific enemy at the beginning of the twentieth century. As a result there was no clear strategy. The architecture of the fleet was not tailored to a specific enemy or threat. The fleet was molded on contemporary fleets and centered on battleships. The emergence of the Japanese empire and its expansionist ambitions led to the identification of a clear threat. Based on this threat the Dutch could anticipate the future area of operations, the time and space factors, and could project the anticipated enemy fleet capabilities. Based on these calculations, the Dutch could tailor their fleet and could build ships designed specifically for the projected task. Based on these calculations, Dutch naval authorities developed submarines that offered the right balance between endurance, speed, range, and armament. Furthermore, based on this factor of specificity the Dutch naval officers could tailor the operational concepts to the geographic conditions of the Indies archipelago.

A thorough analysis of the enemy capabilities vis-à-vis the geographic conditions led to the initiation of the development of the *Roedel* tactics, initially designed for employment against the enemy transport fleets in the narrow straits leading to the Java Sea. An assessment of the Japanese air capabilities led to adaptation of the concept of

[344]Millet, 335-336.

operations and a further development of the concept by introducing long submerged approaches and full integration of the naval air service capabilities into the concept. Contributing to the strategic calculations and the subsequent operational concepts were the lessons identified from World War I. Dutch naval officers identified the root causes for the failure of the German unrestricted submarine warfare and implemented these lessons into its own concept of operations. These lessons led to a pivotal role of offensive concentration and the offensive posture that characterized the Dutch *Roedel* tactics.

The Dutch neutrality policy proved a discouraging factor for innovation by the Netherlands East Indies Fleet. This policy, which constrained participation in coalitions, inhibited the Dutch from nesting their innovative operational concept into an overarching strategy. Early cooperation with Allied partners in the Pacific, like the British and the Americans, could have anchored the defense of the Netherlands East Indies into a regional defense. Dutch foreign policy displayed a remarkable shift after the start of World War II. Desperate attempts to build operational level cooperation and integration to stem the Japanese advances in South East Asia led to an improvised defense strategy. This strategy would unravel and undermine the Dutch submarine warfare concept.

Technology and Innovation

Although technological development is sometimes viewed as the equivalent to innovation, the latter does not necessarily play a pivotal role in innovation. Of more importance is how these technological developments translate into operational concepts. Furthermore, a nation's industrial and technological base influences its ability to innovate. Another factor is the level of exposure military forces have to technology within the military forces of other nations or actors.

At the beginning of the twentieth century, the Dutch industrial base proved too shallow to compete in the global naval arms race, resulting in the obsolescence of the Netherlands East Indies Fleet. It was the same shallow industrial base that forced the Dutch government to center its fleet for the defense of the Netherlands East Indies around the submarine when the start of World War I inhibited foreign delivery of building materials for battleships. This is an example of the nonlinear nature of innovation: the shallow Dutch national industrial base, inhibiting innovation via battleships, instead encouraged the development of an asymmetrical torpedo fleet, centered on the submarine.

Notwithstanding its neutrality policy, the Dutch were exposed to technological developments within other countries. During World War I, the peak of technological developments of the first half of the 20th century, Dutch naval officers benefitted from the technological know-how that was acquired through the robust defense attaché footprint, the internment and employment of aircraft and submarines by the belligerent powers, and liaison with the British Admiralty and the German naval staff. The exposure to German submarine technology through the cooperation with the German naval engineer bureau, established in the Netherlands to bypass constraints posed by the Versailles Peace Treaty, led to a well-developed know how on submarine design and technology. The predilection for German naval technology would last until the start of World War II.

A causal relationship between technology and innovation can be found in the invention of the periscope-antenna and the *snorkel.* These technological innovations acted as catalysts for the development of the Dutch *Roedel* concept. These developments

breached a technological barrier that initially inhibited the maturity of the Dutch submarine warfare concept of operations: submerged radio communications and distant submerged approaches of enemy vessels. The adaptation of German hydrophone technology, again based on its predilection of German technology and its exposure to this technology, brought the Dutch operational submarine concept to full growth.

The Organizational Politics of Innovation

The military politics of innovation, representing inter-service and intra-service rivalry, inhibited innovation in the Netherlands East Indies Navy. The evolving role of the navy in the defense of the Netherlands East Indies in the first decade of the 20th century marked the start of inter-service rivalry between the Netherlands East Indies Navy and the KNIL that would prove a reoccurring theme during the period covered by this thesis. The discussion revolved around operational responsibilities and the hegemony over the defense of the Netherlands East Indies. The inter-service debates were centered on the accumulation of resources and authority at the expense of the sister service. Both services defended their ground at the expense of a coherent defense strategy for the Netherlands East Indies. The constant struggle resulted in a decreasing lack of confidence by the Dutch electorate. Furthermore, the animosity inhibited integration of the capabilities of both services into a coherent innovative operational concept.

Next to inter-service rivalry, intra-service rivalry proved pivotal to innovation in the Netherlands East Indies Navy. This rivalry is illustrated by the central debate that characterized the period covered in this thesis--that between proponents of a torpedo centric fleet and proponents of a blue water, big gun fleet. This debate influenced the defense strategy and would be decisive for the architecture of the Netherlands East Indies

Fleet. This is best illustrated by the swaying strategy that characterized the preamble to World War II. The defense strategy, initially centered on the defeat of neutrality violations transformed into a strategy based on the enemy transport fleet, ultimately transforming into a strategy based on Mahan's command of the sea principles. It was the latter that ultimately inhibited the development of a promising submarine warfare concept into full fruition. Furthermore, intra-service rivalry manifested itself in discussions between the Naval Staff in The Hague and the Commander of the Netherlands East Indies Navy. This debate, best characterized as a disagreement between theory and operational experience, would cause delay in the implementation and architecture of fleet designs, and thus inhibited innovation.

Civil-Military Collaboration

The Netherlands East Indies Navy had to operate during a time period of minimal funding and low resource support. The low commitment of the Dutch Government towards defense spending was based on the neutrality policy and the lack of a clear and present threat during the first decade of the twentieth century. In the aftermath of the atrocities and cruelties of World War I, a growing antipathy towards military institutions, and an economic crisis decreased the willingness of the Dutch electorate to contribute to large defense spending. This in turn materially eroded the operational effectiveness of the Dutch fleet. Minimal funding did not discourage military innovation in the Netherlands East Indies. The naval officers developed an innovative submarine warfare concept despite marginal financial resources. The lack of funding however, inhibited modernization of the submarine and surface fleet in the early 1930s and inhibited the construction of the numbers of submarines required to effectively operate throughout the

entire archipelago for a longer period. In other words, it undermined the effectiveness of the concept because of the failure to keep funding a robust submarine force that matched to the numbers and readiness needed to give it a chance for success.

Further Research

The research for this thesis revealed areas for further research that are beyond the scope of this thesis. These areas might add value to the military professional and might act as a baseline to conduct further investigation. First, the research uncovered indicators that the ongoing rivalry between the Netherlands East Indies Navy and the KNIL materialized in an inefficient cooperation between the air services from the Navy and the Army during the Japanese invasion in March 1942. Further research is needed on underservice and coalition cooperation during battle against the Japanese invaders. Second, research revealed several dissertations and accounts on the operational effectiveness of ABDACOM from Allied perspectives but not from that of the Dutch. Further research is needed on this early form of coalition warfare from a Dutch perspective. Last, defeat is one of the biggest catalysts for innovation and change within the militaries. Dutch naval officers failed to grasp the new way of war, mastered by the Imperial Japanese Navy. They failed to understand the pivotal role that torpedo planes and aircraft carriers would play in gaining air superiority over the Indies archipelago. The Netherlands East Indies Navy would continue the war against Japan under British command from Australia. The Dutch already adopted the aircraft carrier in 1944. Further research is needed on the influence of the defeat of the Netherlands East Indies Fleet by the Imperial Japanese Navy on the development of the Dutch post-war fleet and as a maritime member of NATO.

The challenges to NATO security will spark discussions on military innovation for tomorrow's fleet, capable of a new way of warfare against an enemy that applies an area denial and anti-access (AD/A2) strategy. The increasing vulnerability of surface ships and forward bases against an enemy that intends to conduct an offset strategy by conducting attacks against air, surface and deploying forces, will ignite discussions that will revolve around new roles for the fleet. Roles and architecture of the fleets has to be tailored to a new way of warfare, based on an ambiguous threat. Future debates will revolve around the role of the submarine, air superiority, and the potential obsolescence of the aircraft-carrier system. The Pacific theater of operations, in other words the same area where ABDACOM's efforts to stem the Japanese new way of naval warfare failed, is an area that is traditionally dominated by naval and air forces. Next to new domains like space and cyberspace, new areas for naval warfare have to be discovered. Pivotal to the debates on the new way of naval warfare, the Air-Sea Battle will be a potential adversary's potential to employ area denial and anti-access capabilities.[345] Allied efforts should be centered on offsetting this rapidly developing capability. Enemy long range detection and targeting capabilities combined with a capable navy will dictate an integration of new technology and doctrine into innovative NATO naval capabilities across a range of contingencies in a new way of warfare.

[345]For AirSea Battle and A2/AD see Jan van Tol with Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, "AirSea Battle: A Point-of-Departure Operational Concept" (Center for Strategic and Budgetary Assessments, 2010).

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